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ADDRESSES.

ADDRESS IN DENTAL AND ORAL SURGERY.

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The year which has just closed has been one of steady advancement in the department of Dental and Oral Surgery, though I am unable to report any particularly new discoveries or brilliant achievements.

The investigations in the etiology of dental caries by Drs. Miller, of Berlin, Mills and Underwood, of London, and Black and others of our own country are still being pursued by these gentlemen, but no recent important announcements have been made. The opinion that the disease is caused by micro-organisms developed in the mouth is, however, rapidly gaining ground, for the conclusions reached by these investigators point very strongly in that direction.

A great deal has also been written during the year upon the treatment of pyorrhœa alveolaris, but very little has been added to the knowledge we already possessed of its etiology. The most notable improvement in methods of treatment is that introduced by Dr. Adair. This consists in applying to the roots of the teeth, after the concretions have been removed, a saturated solution of iodine in wood creasote, and then filling the pockets with tannic acid dissolved in glycerine, to form a protective dressing, and repeating this treatment once each day until the pockets are closed by new tissue. A method very similar to this was introduced by Dr. W. H. Atkinson some twenty years ago, and which at first met with very general adoption, but soon fell into disuse.

Since the introduction of Dr. Adair's remedies many have called to mind those of Dr. Atkinson, which consisted of four formulas, viz:

1. Chloride of zinc and resublimed iodine, equal parts rubbed together.
2. Saturated solution of iodine in alcohol.
3. Saturated solution of iodine in wood creasote.
4. Pure wood creasote. Later he substituted caustic potash and crystalized carbolic acid, rubbed to a paste in a warm mortar, and which are now being used with much better success than formerly, doubtless owing to the fact that the disease itself is better understood, and consequently the remedies needed for its successful treatment.

New instruments for various purposes and of unique forms have been invented almost without number, consequently we cannot take space to enumerate them. Some are real improvements over the forms already in general use, but the greater number are of no real practical value, except to furnish employment for the instrument makers.

The subject which has seemed to occupy the minds of the dental practitioners more perhaps than any other, has been that of *pulpless teeth* and their treatment. Not that there has been any change in the mode of treatment, for this seems to be as nearly perfect as it is possible with our present knowledge to make it; but rather because they have been called upon, by one of our leading medical journals, to defend their practice. The journal in question condemned the practice of treating and retaining in the jaws teeth which were diseased or dead, upon evidence, which to the dental specialist at least, seemed very meager, indeed, and then drew the conclusion, that as a result of such practice, "nervous diseases about the head were becoming alarmingly common[1]." While the editor in the same number of the journal calls attention to the article from which the above is quoted, and says it "furnishes additional evidence of the perils of tooth saving[2]." These articles immediately brought out several vigorous protests from the dentists, but the discussion of the subject was cut short by the editor, as it doubtless seemed likely too become too voluminous for the pages of his journal. But the vital question as to whether *dead teeth* could be retained in the jaws, be made useful and at the same time inoffensive to the general health of the individual, did not receive the attention that its importance would seem to deserve. The term *dead teeth* is usually applied to teeth which from disease or traumatism have lost the vitality of their pulps, and not in its broader sense, for that would imply also a loss of vitality in the cementum and the pericementum. Teeth in this condition would give rise to irritation and acute inflammatory processes of the surrounding tissues, and like all irritating foreign substances be soon expelled from the economy.

The term *pulpless teeth*—one in common use among dentists—better describes the condition of the teeth under discussion, and hereafter when referring

[1] Medical Record, Vol. 26, No. 14, page 374.
[2] Idem 379

to this condition I shall confine myself to the use of this term. The teeth, as is usually understood, receive their nutrition and sensation from two distinct sources, viz.: through the pulp which fills the central canal, and the pericementum which covers the root. The pulp is largely composed of blood vessels and nerve fibres, which are continuations of the maxillary arteries and nerves, while the blood-vessels and nerve-fibres of the pericementum, with the exception of a few small twigs from the above mentioned sources, are derived entirely from the gingival arteries and nerves.

The pupil gives vitality to the dentine and the enamel, which makes up about four-fifths of the bulk of the tooth, but which contains only from 13 to 18 per cent. of organic matter when taken together. The pericementum, gives vitality to the remaining portion, viz.: the cementum, which is analagous to bone and contains from 30 to 40 per cent. of organic material, and it is through the pericementum that the teeth have their attachment to the alveolus.

The death of the pulp *per se* has no effect upon the functions or vitality of the cementum or the pericementum, for their is no direct communication between them, and experience teaches that these tissues may perform their office in a normal manner for an indefinite period after the destruction of the pulp, provided the dentine has been treated antiseptically, and the central canal hermetically closed at the apex of the root.

In advanced life there is a tendency to obliteration of the pulp by peripheral calcification, a process similar to, if not identical with, the formation of the dentine. Many times the pulp will be found reduced to a mere thread, and in others the bulbous portion is entirely calcified. The functions of the pulp in these cases are more or less impaired or destroyed, but no discernible effect is produced, either upon functions of the cementum or the pericementum.

There is, however, a form of calcification of the pulp known as interstitial, in which nodules of secondary dentine or osteo dentine are formed in the body of the organ, which frequently gives rise to severe neuralgia of the face and head, and reflex irritations resulting in diseases of the eyes and ears.

In the articles referred to, the cases cited to substantiate the conclusions at which the authors arrived, presented no satisfactory evidence that would indicate the teeth as pulpless, or that they were the seat of alveolar abscess or pericementitis; in fact, the evidence was strongly in favor of the supposition that the reflex irritation mentioned, was caused by an irritated and inflamed condition of the pulps, the result of an advanced stage of caries. The question which very naturally arose in the minds of all intelligent dental practitioners who had carefully read the articles, was whether the gentlemen who criticized the methods of treatment pursued by dentists in the treatment of pulpless or diseased teeth, and which has been the means of saving thousands and tens of thousands of teeth in a useful condition, some for ten, twenty, thirty, and even forty years, without detriment to the general health were competent to criticize; and whether after all they really knew the difference between a simple case of pulpitis and one of pericementitis, or anything whatever of their symptomalogy.

There is no doubt that teeth which are diseased from alveolar abscess, (the result of the death of the pulp) accumulations of salivary calculus about the necks and roots; pericementitis or irritation and inflammation of the pulp from caries, etc., occasionally give rise to acute neuralgias of the head and face, and reflex nervous irritation, resulting in functional derangements and organic diseases of the eyes and ears, but that this is by any means common I do not believe, nor is the radical treatment insisted upon by these writers, viz., the extraction of all suspicious teeth, the only or best treatment to be recommended, for the greater proportion of such cases are amenable to scientific treatment. The dentist who would practice such wholesale and ruthless destruction of the teeth would not be worthy the name of dentist, for it would be contrary to the natural impulses of humanity and against all sound surgical principles. The educated dentist has been taught that it is his mission to *save* and not to *destroy* the teeth; and all his energies are brought to bear in this direction, while extraction is to be practiced as a *dernier ressort.*

Pulpless teeth which have been treated by removing the devitalized or putrescing pulp, the central canal and the canaliculi of the dentine rendered antiseptic, the apical foramen hermetically plugged with an indestructible and non-irritating material and the canal and cavity of decay properly filled, will, in nine cases out of ten, give rise to no untoward symptoms, and remain in the jaws indefinitely in a servicable condition; the truth of which no doubt can be vouched for from personal experience by many gentlemen of the Association. It occasionally happens, however, that a pulpless tooth, from the small size of its central canal or a sharp curvature of its root, cannot be successfully treated in the manner described; these will in many instances, sooner or later, give trouble from alveolar abscess; but because a few unfavorable cases cannot be treated with success is not a good reason for discarding the treatment.

Inflammatory conditions of the pulp, especially the subacute and chronic forms, very much oftener result in facial neuralgia and reflex troubles of the eyes and ears, than do pulpless teeth which have been treated by the method just described, "although no appreciable irritation may be experienced by the patient in the affected tooth[3]." Such cases can be cured just as readily and permanently by the devitalization of the pulp, followed by the usual treatment for pulpless teeth, as by the heroic measure of extraction, and be infinitely better for the patient. A sufficient number of cases might be presented, gathered from the published records, to satisfy any fair minded member of the Association of the truth of these statements; but the time at my disposal will not permit me to do so.

One of the authors of the articles referred to "re-

[3] Medical Record, Vol. xxvi, page 525.

gards the treatment of pulpless teeth by the practice in vogue, as the reverse of procedures founded on well-established surgical principles, since the stopping of the natural outlet for the escape of putrescing products from portions of the pulp left remaining in the canal, and dental canaliculi through the exterior part of the tooth itself make their passage into the tissues underneath unavoidable. The diversion of the drainage must be of questionable propriety in many instances, since the tissues about the roots of the dead teeth are liable to become infiltrated with the products of decomposition, the absorption of which, when slowly formed, is much more liable to contaminate the system than the discharge of pus into the mouth from an alveolar abscess[4]." The argument looks plausible, and if the statements upon which it is founded were correct, it would be unanswerable, but unfortunately for the writer and his theory they are not. He speaks of closing "the natural outlet for the escape of putrescent products, etc." from the tooth. Which is "the natural outlet" the apical foramen or the cavity of decay? I answer; that depends upon circumstances. When there is no communication between the central canal and the cavity of decay the apical foramen is the *only* outlet; when the cavity of decay communicates with the central canal then the cavity of decay becomes the *natural* outlet. Other things being equal an abscess left to itself always chooses the shortest and quickest route—the one offering the least resistance—to the point of outlet. But it is the duty of the surgeon to cut short the process by giving exit to such accumulations of pus or putrescent material, wherever located, at the earliest possible moment, and thus shorten the period of suffering and remove the danger from septic poisoning. The same obligation rests upon the dentist.

When there is no communication between the cavity of decay and the central canal through which discharge can take place, gases are formed by the processes of decomposition, and septic material is forced through the only outlet, the apical foramen.

The root of the tooth being imbedded in a bony alveolus and surrounded by the tissues of the face and mouth, septic products discharged at this point not only immediately set up inflammatory action, resulting in acute alveolar abscess, but from its location and the character of the tissues to be penetrated in seeking an outlet, several days are required to accomplish it, and this, unless operative measures are employed for its cure, soon becomes chronic and more or less constantly discharges as the case may be, either into the mouth, the antrum of Highmore, the nasal fossa, or through the external tissues of the face, and which not infrequently if left to run its course, terminates in other and more serious complications. Such cases, however, can in a majority of instances, be *arrested* in their course, and in still a greater number *prevented* if taken in time, by giving exit to the contents of the pulp canal by simply drilling an opening into the canal through the cavity of decay, or other convenient location, and removing the septic material. This is the treatment pursued by reputable dentists. Is it a proceeding contrary to sound surgical principles?

When the apical foramen has been properly closed there is usually no more trouble with alveolar abscesses, for septic materials are prevented from coming in contact with the surrounding tissues. Is such practice "the reverse of well-established surgical principles?" I think not. It is nature's own method of trying to prevent a recurrence of the disease, for it not infrequently happens that the apical foramen in pulpless teeth, after a time becomes completely closed by a deposition of secondary cementum, doubtless the result of this previous irritation of the pericemental membrane. Can we go far astray when we follow such teaching? Are we not constantly trying to understand the processes by which nature restores a diseased organ to health, and the laws which govern them, that we may profit by the knowledge, and so shape our treatment as not to antagonize them, but rather prove helpful? This is what the dentist is trying to do by the method pursued in treating pulpless teeth. This is not empiricism, but enlightened, rational practice.

Furthermore, when the central canal has been thoroughly cleansed by removing the remains of the devitalized pulp, the apical foramen sealed, the cavity properly dried, the dentinal canaliculi rendered antiseptic by appropriate treatment, the central canal and cavity of decay so plugged as to exclude air and moisture, it is hardly possible for "products of decomposition to be formed in the canal or canaliculi, pass into the tissues beyond and be absorbed."

The antiseptics generally used are wood creasote, carbolic acid and bichloride of mercury, either of which will prevent decomposition; but when, as in this method of treatment, the effect of excluding the air and moisture is added to the power of the antiseptic remedy, it seems almost impossible for decomposition to take place. It is admitted that in those cases which have not received appropriate treatment such conditions do exist; but even in these extraction is not called for, as it is yet possible to place a good proportion of these in a healthy condition.

In behalf of our specialty, I, therefore, enter a most earnest protest against the principles set forth in these articles, in so far as they attempt to prejudice the profession against a line of treatment that has stood the test of time and proved so signally successful in the hands of dental practitioners, and hope the members of the Association will not be inclined to accept such conclusions as a final settlement of the question, but carefully investigate every case of disease of the eyes and the ears, and neuralgias of the head and face, in relation to the influence of pulpless and diseased teeth in producing such conditions, and instead of advising the immediate extraction of the suspected teeth, the patient be placed in the hands of a skillful dentist for appropriate treatment.

If such practices could become general we should not be confronted with the statement, that as a result of the practice of dentists in treating pulpless teeth,

[4] Medical Record, Vol. xxvi, page 525.

"nervous diseases about the head were becoming alarmingly common." If the principles which underlie the practice of dentistry could be better understood by the general practitioner, there would be fewer people in the world with endentulous jaws, and consequently more people with robust digestions; for it is a lamentable fact that with many the value of the teeth in promoting the general health is greatly underestimated, and patients are advised to submit to the extraction of teeth that could be successfully cured of disease and made useful for years. The only way in which this end can be accomplished is through the medical colleges. This Association a few years ago recognized scientific dentistry as a department or specialty of medicine by the organization of a separate Section. This has done much already to stimulate the young men entering the ranks of dentistry to take a full medical education, and is resulting in a demand for broader and more comprehensive teaching in the dental schools, of the sciences upon which rational medicine and surgery are based. What is most needed, however, at the present time, in view of the subject presented in this address, is that the medical colleges of our country should each institute a Professorship, or Lectureship, on dental surgery, through which all future graduates shall receive at least a theoretical knowledge of dental and oral diseases and their treatment. The possession of such knowledge would place the general practitioners in position to correctly advise their patients with regard to the care and treatment of their teeth, be the means of preventing a great amount of suffering to their patients and annoyance to themselves from inability to correctly diagnose such diseases, as well as to check the wholesale destruction of organs so necessary to the preservation of the functions of digestion and a robust condition of health.

Argyle Building, cor. Michigan Ave. and Jackson St.

LECTURE ON SUBCUTANEOUS BLOOD-INJECTIONS, SALT WATER INFUSION, AND INTRAVENOUS TRANSFUSION.[1]

BY PROF. DR. H. VON ZIEMSSEN,
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(*Concluded from page 39.*)

The effect of simple addition of fluid after loss of blood, as in cholera, etc., has, according to observations made thus far, been very considerable, and we must therefore notice this important fact. Hitherto transfusion has been used in by far the greater number of cases of severe hæmorrhage which threatened life. It was assumed that death from hæmorrhage was due to the loss of the carriers of oxygen, and on this account transfusion was done. But in place of this *physiological* reason for hæmorrhagic death, Goltz has now brought forth the *physical* reason, "the emptying of the pump-works" (das Leergehen des Pumpwerkes), in which he teaches that the heart can only set the blood vessels in motion by a certain degree of tension in the vascular system. Hence it is deficiency of fluid which causes death. Accordingly, Kronecker and Sander showed by experiments on animals that death from hæmorrhage could be prevented by the timely transfusion of salt solution, and Schwarz and others showed that the same was true in man in threatened death from hæmorrhage. Since then salt water transfusion has come generally into use, and has been much used by surgeons and gynecologists. This is only another illustration of how much practical therapeutics is indebted to physiology.

But there is one thing that, from Maydl's and Schramm's experiments, must not not be overlooked: hæmorrhage may be such that transfusion may be demanded to prevent death. Transfusion of salt solution may delay death, but cannot prevent it. Besides the diminution of the amount of blood, we must also consider the supply of oxygen carriers, and in all cases in which salt water transfusion is made to prevent death from hæmorrhage, it is advisable to follow it with transfusion of blood as soon as the alarming symptoms of threatened death are past. In these cases, also, subcutaneous blood injections, on account of their safety and ease, are always to be preferred to intravenous transfusion.

In salt water transfusion in cholera the case is, of course, different. Here it is first of all necessary to keep the blood in circulation, to keep it in rapid motion, while the lost serum is being replaced. That subcutaneous injections fulfil these indications much more completely than intravenous transfusion is already sufficiently shown.

Determinations of hæmoglobin have so much the greater value, it seems to me, because they give some explanation of the question, how subcutaneous blood injections act in regard to the amount of hæmoglobin on the addition of indifferent fluids. In order to solve this question, salt solutions and then defibrinated homogeneous blood were injected into various anæmic persons. I may give two instructive cases: in the first only small quantities of salt solution and blood were injected; in the second considerable quantities of each were injected.

Marie S., æt. 24. Chlorosis of high grade, moderate oligocythæmia, considerable oligochromæmia.

Nov. 5, 5:30 p.m. Corpuscles 2,612,500 in ccm.; hæmoglobin 24.88 p. c.
Nov. 6. 5:30 p.m., hæmoglobin 25.59 p. c.
Nov. 16, 5:30 p.m., hæmoglobin 26.35 p. c.
Nov. 17, 10:30 a.m., hæmoglobin 26.35 p. c.
Nov. 19, 10:15 a.m., hæmoglobin 26.42 p. c.
Nov. 19, 10:30 a.m., injection (subcut.) 100 ccm. of 0.75 per cent. salt solution.
Nov. 20, 6 p.m., hæmoglobin 25.29 p. c.
Nov. 21, 6 p.m., hæmoglobin 26.35 p. c.
Nov. 23, 7 p.m., hæmoglobin 26.35 p. c.
Nov. 25, 10:30 a.m., hæmoglobin 25.7 p. c.
Nov. 25, 11 a.m., injection 50 ccm. defibrinated blood.
Nov. 26, 5 p.m., hæmoglobin 30.81 p. c.

Notwithstanding the small amounts of the fluids injected, the difference between the action of the salt solution and of the blood injection is very apparent. After the infusion of 100 ccm. of salt solution the hæmoglobin fell 1.13 per cent., and did not entirely reach its former height in the next five days. After the blood injection it rose 5.10 per cent., and then gradually went down in the next few days.

[1] Translated, by permission of author and publishers, from advance sheets, by Wm. G. Eggleston, M.D., of Chicago.

Still more instructive is the next case, in which observations were made during a number of weeks, and determinations made of the hæmoglobin, number of corpuscles, and proportion of white to red corpuscles.

Anna G., æt. 16, was overworked in the past few months and became very weak; entered hospital on November 18. Father living and healthy; mother dead, but patient does not know of what disease. Patient has had no illness other than scarlatina. Anæmia of high grade, muscular system weakly developed; has never menstruated. No organic disease; appetite good; weight 77.26 lbs. Ordered complete rest in bed, nourishing diet.

Nov. 19, hæmoglobin 32.75 p. c.; corpuscles 2,443,000; white to red 1:122.

Nov. 22, 11 a.m., Hb. 35.91 p. c.; corpuscles 2,825,000; white to red 1:282.

Nov. 22, 11:30 a.m., subcutaneous injection 250 ccm. 0.7 p. c. salt solution.

Nov. 22, 4 p.m., Hb. 28.63 p. c.; corpuscles 2,835,000; white to red 1:189.

Nov. 22, evening, no pain at site of injection, no rise of temp. Feels much better; good appetite.

Nov. 23, feels well generally, non-febrile; thigh slightly sensitive to pressure. Hb. 31.66 p. c.; corpuscles 3,005,000; white to red 1:207.

Nov. 25, Hb. 33.99 p. c.; corpuscles 3,480,000; white to red 1:348.

Nov. 28, 11 a.m., Hb. 39.08; corpuscles 3,650,000; white to red 1:329.

Nov. 28, 11:30 a.m., injection 175 ccm. defibrinated human blood in both thighs under chloroform.

Nov. 28, 4. p.m., Hb. 40.85 p. c.; corpuscles 3,707,500; white to red 1:289. No pain; no elevation of temperature.

Nov. 29, slight rise of temp.; thigh painful on pressure. Hb. 41.8 p. c.; corpuscles 3,682,500; white to red 1:324.

Nov. 30, temp. between 100.4° and 102°. Hb. 41.68 p. c.; corpuscles 3,720,000; white to red 1:268.

Dec. 2, temp. 98.9°–100.5° Hb. 40.74 p. c.

Dec. 3, no fever; feels well generally. Hb. 40.85 p. c.; corpuscles 3,757,500; white to red 1:331.

Dec. 4, no fever. Hb. 41.21 p. c.; corpuscles 3,850,000; white to red 1:302.

Dec. 6, 10 a.m., Hb. 36.41 p. c., corpuscles 3,762,500; white to red 1:239.

Dec. 6, 11:30 a.m., injection 350 ccm. defibrinated blood in one leg and both thighs.

Dec. 6, 3 p.m., temp. 100.4°. Normal after 4 p.m.

Dec. 6, 5 p.m., Hb. 41.93 p. c.; corpuscles 3,720,500; white to red 1:176.

Dec. 7, appetite smaller. Morning temp. 98.6°; evening to 100.7°. Legs very sensitive to pressure; urine small (590 ccm., sp. gr. 1025), large sediment, which consists of urate of soda and uric acid crystals; no blood, no albumin. Hb. 55.08 p. c.; corpuscles 3,667,500; white to red 1:283.

Dec. 8, appetite small. Morning temp. normal; evening 101.1°. Hb. 43.18 p. c.; corpuscles 3,742,500; white to red 1:316.

Dec. 9, appetite good. Thigh less sensitive to pressure. Morning temp. normal, evening 101.3°. Hb. 47.94 p. c.; corpuscles 4,035,000; white to red 1:322.

Dec. 10, feels very well. Color of skin and mucous membrane much improved. Evening temp. 101.1°. Hb. 44.32 p. c; corpuscles 4,062,500; white to red 1:299.

Dec 12, feels better; color much better. Hb. 43.6 p. c.; corpuscles 3,997,500; white to red 1:345.

Dec. 13, Hb. 44.58 p. c.; corpuscles 3,725,000; white to red 1:235.

Dec. 14, Hb. 43.29 p. c.; corpuscles 4,312,506; white to red 1:308.

Dec. 15, Hb. 48,53 p. c.; corpuscles 4,292,500 white to red 1:346.

Dec. 16, Hb. 48.84 p. c.; corpuscles 4,257,500; white to red 1:314.

Dec. 17, Hb. 50.08 p. c.; corpuscles 4,295,000; white to red 1:291.

Dec. 18, Hb. 50.4 p. c.; corpuscles 4,200,000; white to red 1:321.

Dec. 20, Hb. 49.92 p. c.; corpuscles 4,302,500; white to red 1:340.

Dec. 20, 12:30 a.m., injection 75 ccm. defibrinated human blood.

Dec 21, a.m., Hb. 88.65 p. c.; corpuscles 4,450,500; white to red 1:262.

Dec. 21, p.m., Hb. 47.89 p. c.

Dec. 22, Hb. 67.05 p. c.; corpuscles 4,472,500; white to red 1:318.

Dec. 23, Hb. 69.14 p. c.; corpuscles 4,420,000; white to red 1:295.

Dec. 24, Hb. 68.26 p. c.; corpuscles 4,500,500; white to red 1:287.

Dec. 26, Hb. 67.4 p. c.; corpuscles 4,555,000; white to red 1:349.

Dec. 27, Hb. 68.84 p. c.; corpuscles 4,757,500; white to red 1:388.

Dec. 28, Hb. 76.71 p. c.; corpuscles 4,740,000; white to red 1:314.

Dec. 29, Hb. 73.99 p. c.; corpuscles 4,612,500, white to red 1:347.

Dec. 30, Hb. 69.74 p. c.; corpuscles 4,747,500; white to red 1:363.

It is seen from this case that the number of corpuscles and the percentage of hæmoglobin do not bear any constant relation to each other. From the tabulated statement the difference in the amount of hæmoglobin after saltwater injection and blood injection is apparent. As in the case of Marie S., we see in this case that, a few hours after the injection of the salt solution (250 ccm.), the hæmoglobin sank 7.28 per cent., and that this difference was again made up within four days. The number of red discs, on the other hand, seemed somewhat increased, and the number of white cells proportionately increased. Meanwhile, nourishing food and rest in bed also had its influence. The increase of hæmoglobin after each blood-injection, as opposed to the decrease after the salt-water injection, is very striking, but not so much the increase of corpuscles, at least not after large injections, in which a considerable number of cells in the body certainly died. It is possible, moreover, that the quality of the blood injected in this case played a peculiar part, and that the corpuscles from an old person—the blood of the first and second injections came from an apoplectic person 60 years old—are not so suitable for transplantation as those of a younger person—third injection. That the capacity of the red corpuscles for transplantation is not the same in all persons is shown in the following case, because the patient was injected with the blood which remained after the third injection in the case of Anna G., and because here the number of red corpuscles showed a corresponding material increase.

Sophie G., æt. 19. Primary oligochromæmia and oligocythæmia; otherwise a healthy and strongly developed person.

Dec. 18, Hb. 45.54 p. c.; corpuscles 3,100,000; white to red 1:253.

Dec. 20, Hb. 45.66 p. c.; corpuscles 3,002,500; white to red 1:284.

Dec. 20, 12:30 p.m., injection of 175 ccm. defibrinated human blood.

Dec. 21, 8 a.m., Hb. 55.31 p. c.; corpuscles 3,637,500; white to red 1:301.

Dec. 22, a.m., Hb. 55.65 p. c.; corpuscles 4,027,500; white to red 1:336.

Dec. 23, a.m., Hb. 54.12 p. c.; corpuscles 3,785,000; white to red 1:323.

Dec. 24, Hb. 53.97 p. c.; corpuscles 3,740,000; white to red 1:294.

Dec. 26, Hb. 52.04 p. c.; corpuscles 3,815,000; white to red 1:257.

Dec. 27, Hb, 48.53 p. c.; corpuscles 3,762,500; white to red 1:244.
Dec. 28, Hb. 50.008 p. c.; corpuscles 3,820,000; white to red 1:323.
Dec. 29, Hb. 49.3 p. c., corpuscles 3,830,800; white to red 1:281.
Dec. 29, Hb. 51.05 p. c.

In this case the action of the blood injection appears in a very satisfactory light, and as the result of the third injection in the case of Anna G. was equally satisfactory, it seems that the blood of the well nourished young man (who was "full blooded" and somewhat hypochondriacal), was especially suitable for transplantation.

In the case of Anna G. it was very clearly seen that in repeated injections of blood in the same region (thigh), with each injection the subcutaneous cellular tissue became more capable of absorption, so that the injection as well as the dissipation of the blood became easier. The case also teaches to what degree renewal of the blood can be carried. In this weak 16-year old girl, weighing 77 lbs., the blood weighed approximately 7.7 lbs. In this case 350 ccm. of blood, more than one-tenth of the whole amount in the body, were injected at one time; and in three operations 600 ccm. of blood, almost one-fifth of the whole amount, were added. The case still further teaches that good results do not depend upon the quantity injected, but that even such small quantities as 75 or 175 ccm. may give excellent results, while they have the advantage of causing no reaction (with the exception of unavoidable pains at the seat of injection), and no fever. Furthermore, the sites of injection are not painful except to direct pressure, if ice-bags be placed over the thigh for the first few days after the injections.

As a matter of fact salt-water injections present fewer difficulties than blood injections, because the dissipation and absorption of the water in the connective tissue takes place with greater ease and rapidity. For this operation the site of injection need not be changed so often, but 3 or 4 syringefuls (75–100 ccm.) may be placed in one spot. And the pain of the massage is so much less severe than that after blood injections that chloroform narcosis may be dispensed with if the patient be not very sensitive.

The possibility of introducing large quantities of water subcutaneously was shown in 1884 by Cantani and his colleagues in Milan, Naples and Genoa during the cholera epidemic. These authors carried out the idea of antagonizing the loss of water and its effect on the circulation by infusing water into the subcutaneous cellular tissue. Cantani's pupils generally infused 1,000–1,500 ccm. of alkaline salt-water in the ileo-costal region by means of an irrigator. The solution consisted of soda 3, distilled water 1,000 parts, and was injected at a temperature of 39° C. With very low temperature of the extremities the fluid was injected at 40° C. In a typhoid stage with very marked reaction 500–600 ccm. were injected at a temperature of only 37.5° or 38° C., and with very high fever at a temperature of 37° C. Samuels' recommendation that the injections be made in the neck should not be carried out, as the cases in which this was done died of œdema glottidis. Massage was not made over the site of injection, and the large quantities of water were left to spontaneous absorption. The results of this method of treatment were generally satisfactory, though very different, according to the nature of the individual case, the stage of the disease and of the epidemic. Further investigations on this subject are necessary, especially as there is a possibility that drugs and alcohol, which cannot be absorbed by the stomach and intestines, might be mixed with the water to be injected.

The apparatus needed for salt-water injections is not complicated. A good glass syringe with a long, not too narrow needle, and holding from 25 to 50 ccm., is sufficient for salt-water as for blood injections, and in time of cholera can be carried in the pocket, as well as the necessary quantities of sodium chloride (7.5 grams to 1 litre), which may be used without carbonate of soda. All that is then necessary is good thoroughly boiled water, and the injection can be made without difficulty or loss of time.

Just as useful is the hypodermatic salt-water injection in dangerous hæmorrhage, or severe acute anæmia from other causes. But in all such cases in which it was simply a matter of choice, I would certainly give preference to injections of blood, for the reasons already stated. But in many cases a blood donor is not at hand, and we cannot always get a sufficient quantity of blood; and in dangerous cases it is always better to fulfil the first indication and feed the heart-pump. After this blood injection may be made, once or oftener as necessary. Nor is there any objection, after severe hæmorrhage, to follow up the blood injection immediately by one of salt-water, the quantity of the latter being proportioned to the amount of blood lost. And if there be danger in delay there need be no hesitation in using simple boiled water for the injection, as this can always be had. Every physician, and especially every obstetrician, should carry a large syringe for subcutaneous injections in his instrument case. During and after labor the most acute hæmorrhages occur, and it is impossible to supply new fluid to the system more quickly and more simply than by the hypodermatic method.

This procedure is very much simplified by the filtering properties of the subcutaneous cellular tissue, which render filtering of the water unnecessary. If a small foreign body is in the water it will be arrested by the connective tissue, or by the lymphatics, and kept out of the circulation, whilst in intravenous injections everything in the water goes into the blood. In the necessity and haste after severe hæmorrhage this is a very important matter. If you had a severe case of post-partum hæmorrhage in the country at night, would you wait to get distilled water and chemically pure salt from the apothecary in town, or for the assistants and necessary apparatus for intravenous transfusion? But if you know that you can inject the necessary quantity of boiled water, and thus obviate the immediate danger to life, you will be much better equipped for such emergencies. And if you find it necessary afterwards to make blood injections, and it is often necessary after severe hæmorrhage, you have time enough to prepare everything, and especially to find a blood donor. The same is

true in cases of dangerous hæmorrhage from the lungs, stomach and intestines. Experience will show how far-reaching is the effect of salt-water injections in such cases. It must be remembered, however, that injections of blood can probably never entirely compensate for loss in large hæmorrhage, and that they only avert immediate danger.

Under what circumstances subcutaneous blood-injections would be efficient in gas poisoning (with carbonic oxide, chloroform, sulphuretted hydrogen) after sufficient depletion, I cannot say, as I have not had any experience thus far. At all events the subcutaneous injections offer as many chances as intravenous transfusion if a previous venesection has been made. We know that many poisonous gases, especially carbonic dioxide, taken into the blood through the lungs, take possession of the hæmoglo bin of the corpuscles, and render them incapable of taking up new oxygen. As shown by Kühne, Landois and others, in these cases the supply of fresh blood has a better effect when a corresponding amount of poisoned blood has been taken from the system than when this is not done. But in all cases the *quantity* of new blood supplied is of the greatest importance; the more functionating oxygen carriers added the greater is the guarantee that life will be saved. Now, the quantity of blood supplied can be much more easily regulated and increased by subcutaneous injections than by intravenous transfusion, as the injections can be repeated or discontinued according to the exigencies of the case. Certainly the results of intravenous transfusion thus far in gas poisoning and other similar cases are not very favorable. Heineke has collected 23 cases (mostly coal-gas poisoning) of which 14 were unfavorable in spite of transfusion, 8 favorable, and 1 uncertain. But the experiments should not be discontinued, especially since we have the hypodermatic method.

Transfusion of salt-water has very recently come into use in poisoning. Favorable results have been obtained from experiments on animals and men so far as can be seen, and give reason to think either that the addition of fluid to the blood may act favorably either by the dilution of the blood or by exciting the renal secretion. Kocher transfused 200 grams of blood without result in two cases of iodoform poisoning, and then saved the patient by transfusing 500 ccm. of salt-water. This result is certainly very good, but its value as proof is lessened by the previous transfusion of blood. But in individual cases it should be remembered, in determining the selection of blood or salt-water, that in those poisons which either deprive the corpuscles of their oxygen (carbonic oxide, etc.) or act upon them as direct solvents and so cause hæmoglobinæmia and ferment intoxication (potassium chlorate, chloral, phosphorus) transfusion of blood must be unhesitatingly given the preference over salt-water.

The action of blood-infusion in acute infectious diseases has been but little studied. Most of the experiments and observations have been in regard to septicæmia, and the results thus far have been very unsatisfactory; abatement of the infectious condition was probably obtained, but no permanent improvement, and the conclusion seemed almost inevitable that, in septicæmia at least, the addition of new blood was only pouring oil on fire, as the ferment thus received new material to work on, and the fire kindled anew. This may be true of septicæmia, but I may doubt if this opinion is just for all infectious diseases and for all stages of infection. For the present, at least, when according to our knowledge of the cyclical course of the infectious condition and the limited life-duration of the germ ferment in individual infectious diseases, we may assume the cessation of activity of the microörganisms, and transfusion may perhaps be really useful under certain circumstances and in certain conditions (heart weakness in typhoid, etc.). In cholera, at least, the necessity of infusion against the consequences of loss of water from the system has been rendered probable by the observations of the Italian physicians. The future will show what is to be expected from the addition of new blood in the other acute infectious diseases. In spite of the opinion that infusion of blood only adds new material to the infectious process our experiments should not be discontinued—as is shown by the change of opinion within a century regarding the diet of fever patients. Theoretical ideas may sometimes be a serious hindrance to therapeutic progress.

More trustworthy is transfusion in chronic infectious diseases, in the dyscrasiæ and anæmic conditions. Our blood-injections in chronic tuberculosis had a striking but transitory effect. It is not impossible that by oft-repeated addition of new blood to the oligæmic organism there may be a more permanent improvement in such hopeless cases, especially if there be no fever. It is certainly worthy of trial. In regard to scorbutus I have had one case, of a man, in which the disease was of the most severe type, and a fatal issue was supposed to be almost certain. The usual antiscorbutic treatment and diet were carried out for 6 days without noticeable good result; and by an injection of 50 ccm. of blood the hæmoglobin was raised in one day from 28.7 per cent. to 33.94 per cent. Three days later, when hæmoglobin had fallen to 32.2 per cent., 50 ccm. of blood were again injected, and on the next day the hæmoglobin was 34.55 per cent. While the increase in the hæmoglobin may seem small for the amount of blood injected (100 ccm.), the improvement in the color, expression and strength of this patient was very striking. There can be no question of the effect of good feeding in this case, as the result followed immediately upon the injection, and previous to this the most nourishing diet had accomplished nothing in 6 days. The sudden change from a very grave condition to one of convalescence is to be ascribed to the blood-injections alone.

The chronic anæmias and dyshæmias, with their numerous functional troubles have been thus far but comparatively seldom submitted to the methods of blood-renewal; at most the conditions thus treated have been leukæmia, pseudoleukæmia and pernicious anæmia. The experiences in these severe forms of disease of the blood-forming organs are certainly not very encouraging, though some cases have been very much improved.

Pernicious anæmia is, of all others, the disease for often repeated transfusions. This was impressed upon me by the case of a man, 45 years old. He was in such a condition of anæmia that he was confined to his bed, becoming syncopal on rising. Prof. Heineke and I transfused 180 ccm. of blood. This was followed by a severe rigor and very high temperature, but from that time the appetite, sleep and strength rapidly improved, and the patient passed into a condition of tolerable existence. He died two years later of recurrence of the disease, due to over-tax of strength by traveling.

Pernicious anæmia would be a very favorable condition for repeated large hypodermic injections, such as were made in the cases of R. C. and Anna G. In our ignorance of the nature of this form of discase, in the lack of sharper etiological indications, and in the face of the notorious inactivity of all dietetic and thereapeutic measures, there is but little doubt, as in leukæmia and pseudoleukæmia, that the addition of new functionating blood must be favorable to the organism, and that this improvement need not always be merely transitory, but may perhaps be permanent, in so far that the anomalies in the functions of the blood-forming organs, especially in the medullary canals of bones, possibly kept up by the anomalous condition of the blood, may be removed by the addition of new blood. As analogous cases may be cited the favorable action of our repeated blood-injections in protracted severe chlorosis, which did not tolerate iron and were not improved by the most careful diet. I am convinced that in these cases the hæmoglobin is not merely temporarily improved, but a cure may be obtained, possibly by action of the blood in a manner unknown to us.

Most of the cases in which I have made subcutaneous injections were cases of severe chlorosis and chronic anæmia from different causes. These cases are comparatively frequent, and remain under observation for some time; and it is very necessary to study the action of this procedure in female cases on account of the great frequency of such anomalies of the blood in women.

Heineke, in his admirable work on "Bleeding, Transfusion, and Infusion," (Deutsche Çhirurgie, Lief. 18, 1885,) expresses the opinion that, in man at least, the greater part of the blood injected subcutaneously first disappears from the cellular tissue, and the blood cells break down and their coloring matter is changed into pigment scales. Every one of my anatomical examinations of the site of injection, which I made one or two days after the injection, in phthisical and other patients, showed me that besides a slight hæmorrhagic imbibition of the cellular tissue there was no trace of the injection. It may be true, as Heineke and Schäffer state, that in experiments on animals the greater part of the corpuscles lie (faded) in the tissue after several days, but in man, at least so far as my researches show, the statement is incorrect. The enormous strengthening effect of an energetic massage is undervalued by Heineke, and the value of experiments on animals, for the solution of this question, over-rated as by Ehrlich. If Heineke's opinion be correct would not an injection of 275 ccm. of blood at one sitting cause hæmoglobinæmia and ferment-intoxication, or at least fever and hæmoglobinuria? But in this case (R. C.[1]) there was no reaction at all, and to me this is better proof than everything else that the injected blood passed directly into the circulation without undergoing important histologico-chemical changes. At all events, experiments on guinea-pigs, in which energetic massage is impossible, do not weaken the positive and incontrovertible results of my cases.

ORIGINAL ARTICLES.

TREATMENT OF FOUR CASES OF ACUTE TRAUMATIC TETANUS.

Read in the Section on Surgery and Anatomy, at the Thirty-Eighth Annual Meeting of the American Medical Association, June 7, 1887.

BY R. C. McCHORD, M.D.,
OF LEBANON, KY.

In presenting for your consideration four cases of acute traumatic tetanus that have come under my observation and treatment, I feel that they are cases of no little interest, in view of the fact that three of the four cases recovered. In searching the literature of tetanus, we are confronted with the overwhelming and prevalent idea that acute traumatic tetanus is incurable. Dr. Gross, in summing up his ideas as to the prognosis of traumatic tetanus, says: "In an experience of forty years, I have seen but three cases where the patient escaped with his life, and then only after a protracted and painful struggle." M. Nicaire, author of the article on "Injuries and Diseases of Nerves," in the "International Encyclopædia of Surgery," in speaking of the influence of treatment upon the termination of tetanus, says: "Must we maintain the absolute distinction into two forms, the one acute, inevitably mortal, and the other chronic, which recovers by itself, and in which the sole part of therapeutists is to prevent death by asphyxia and give the patient ease? I believe it more correct to say, with Richolat, setting aside the overwhelming forms, which seem beyond the resources of art, that the acute form has never been directly cured."

Did time permit, I might go on and cite many similar opinions going to show how little faith the profession at large have in the therapeutic medication of tetanus. My experience, though in a small way, has taught me to differ from the authorities; how wisely the difference of opinion may have been formed, from experience, I will leave you to judge. We are all too much accustomed to folding our arms in the presence of these so-called incurable diseases.

Case 1.—On June 23, 1878, H. C., a stout negro man, aged 21, presented himself with a pistol ball under the skin of dorsal surface of index finger of left hand. He stated that the night previous he was cleaning an old Colt's revolver, and by some means dropped the cylinder on the hearth, causing its dis-

[1] THE JOURNAL, July 9.)

charge. The ball entered the palmar surface of index finger, slightly touched the bone, and lodged as described on dorsal surface, without fracturing the bone. Why it did not pass on out I cannot explain, except it was probably due to the defective or small charge of powder. I made an incision and extracted the ball, dressed the finger, and saw no more of H. C. until five days later, when I was hurriedly sent for, with the message that he was having spasms. On my arrival I found him in bed perfectly rigid, with his head thrown backwards and the weight of body resting for the most part on back of head and heels. The muscles of back and abdomen were rigidly contracted, as were also those of the extremities and jaws. The wound on finger presented an unhealthy appearance, discharging a thin sanious fluid, and manifesting no disposition to heal, the whole hand being very much swollen. Seeing that there was no disposition to a relaxation of the spasm, I began the administration of chloroform and continued it to its full effect, with the result of relaxing the rigidity of the muscles. As soon as the spasm of muscles was controlled, I dissolved about 30 grains of bromide of potash in water, and waited for the effect of the chloroform to pass off sufficiently for him to swallow. I forced him to swallow the potash, when he again soon became rigid as before. The chloroform was again brought into use, with like result. I sat by him for several hours, keeping him under the influence of the chloroform, for without it he was rigid. I gave him about 90 grains of bromide of potash in about two hours, the relaxing effect of the chloroform enabling me to administer it.

Under the influence of the chloroform and bromide of potash, after several hours, the opisthotonos and general tetanic spasms were to a slight extent controlled. I left him in the hands of his friends for the night, after instructing them to administer the bromide of potash in 30 gr. doses every two hours, and to keep the tetanic spasms under control with the chloroform. I saw him the next morning and, to my surprise, he was some better, the muscular rigidity being relaxed. His friends had carried out my instructions explicitly, and the amount of chloroform they had used told plainly how hard the tetanic spasms had been to keep under control.

In order to test the full effects of the bromide of potash, I let him out from under the influence of the chloroform; but on attempting to give the bromide of potash, he became rigid, and I was forced to again resort to the chloroform before he could swallow. I then began to give the bromide of potash almost without regard to quantity, all he could well swallow. By evening the tetanic spasms were about under control, and he could take the potash without the aid of chloroform. He was also able to swallow some fluid nourishment. The same course of treatment was followed out during the second night, the chloroform rarely being necessarily used. On the morning of the third day he was completely relaxed. From this time on for ten days he was kept fully under the influence of the bromide, only once having to resort to the use of chloroform, and then it was only when the bromide of potash had been held up to test its effect. His hand was dressed, for the most part, with a flaxseed poultice, and nourishment administered in the fluid form at regular intervals. He made a complete recovery, without any unpleasant effects, so far as I could determine, from the heavy administration of the bromide.

Case 2.—In the summer of 1879 T. R., a negro boy aged about 10 years, stout and well nourished, trod on a rusty nail while at play, and about four or five days afterwards I was asked to see him for what was supposed to be sore throat. When I saw him first nothing was said about the injury to foot from nail. I found the muscles of jaws somewhat contracted, and on his attempting to open his mouth he complained of a cramping at angle of jaws and some pain. I made a superficial examination and prescribed some domestic remedy. The following day I was asked to see him again, as he was acting a little peculiar and could not open his mouth. On attempting to force his mouth open, he complained of great pain and a sense of impending suffocation, which in a moment was accompanied by a look of contentment and then the sardonic laugh. I soon recognized the trouble, and on inquiry was told that about six days previous he had trod on a rusty nail, and though the wound was painful at the time, yet it had never suppurated and was now healed over. On examination I discovered, immediately under the instep and a little to the outer surface, a slight abrasion of the skin covered over by a slight scab. On removing this I found the wound had not healed, but presented an unhealthy appearance. While examining the wound his jaws became firmly closed, the muscles of neck contracted, and for a moment he was almost rigid. I ordered bromide of potash in 10-gr. doses every hour, and a poultice to the foot. At my morning visit I was told that he had been able to take but little of the potash on account of the difficulty in swallowing. By this time the tetanic spasms had become frequent and more prolonged, and it was impossible for him to swallow but very little fluid at a time. I began the administration of chloroform as in *Case 1;* gave the bromide of potash while the muscles were relaxed by chloroform. In this way he took the potash at intervals of one or two hours during the night. The next morning the frequency and severity of the tetanic spasms were somewhat less, and he could swallow fluids without producing much spasm, though occasionally during the day and following night chloroform had to be administered to keep them under control. On the morning of the third day the spasms were under control and the chloroform was no longer needed. The bromide of potash was kept up at intervals of two hours for the next three days, during which time he took liquid nourishment with but little difficulty, the spasms gradually growing less frequent and severe, until finally they ceased, and on the morning of the sixth day from time of commencing the treatment he was in fine condition, free from spasm and but little rigidity of muscles. Although I considered him almost out of danger, yet I ordered the potash continued. Soon after my morning visit on the sixth day, I left town and was gone all day, and on my return late in the afternoon, I found a message awaiting me to go to

see the boy immediately. On my arrival at the house I was surprised to find my patient dying. He died soon afterwards. On inquiry I learned from the mother that, soon after my morning visit, she discovered that the powders of bromide of potash were out. She sent to my office to know whether she must have the box refilled with the powder or not, and as I was absent, instead of having it filled and continuing the medicine as directed, she concluded to wait until my return, with the result as stated.

Case 3.—April 15, 1881, I saw, with Dr. W. R. Ragsdale, L. B., a native of Germany, but of Jewish birth. He was 17 years old; general physical condition delicate. He had but a few weeks previous arrived in this country, and could speak but a few words of English. Four or five days previous to my first visit he had accidentally pierced his left hand through with a paper-file, just external to the metacarpal bone of little finger. The wound had not healed, but presented an unhealthy appearance, quite tender to the touch. He presented well-marked trismus at intervals, which gradually progressed until opisthotonus was well-marked. He was naturally very obstinate, and not being able either to speak or understand English, it was with the greatest difficulty that we could get him to take the medicine prescribed. The wound was laid open and dressed with a poultice, which seemed to give him some ease, and, we flattered ourselves, some temporary relief to the tetanic spasm. By direction of L. B.'s uncle, who visited him, I was requested to remain in the case with Dr. R., so that one or the other could be in constant attendance. He complained of much pain at site of wound, for the relief of which hypodermics of morphine were given. The tetanic spasms were controlled at first by chloroform. Bromide of potash was administered in 20 and 30 grain doses every two hours. For several days, while he took the potash without opposition, the spasms became less severe. On account of his extreme repugnance to chloroform and determination not to take any more, hydrate of chloral was given in 20 grain doses every three or four hours as a substitute. Sometimes it was administered by the mouth and at other times by rectum, as the caprices of our patient would allow. It served its purpose well. When we could get him to take the potash regularly the chloral was not required, only to produce sleep. For nearly four weeks this patient was kept under the influence of bromide of potash, and I would say for three weeks he averaged 20 grains of bromide of potash every two hours. This was found necessary to control the tetanic spasms. Sometimes when his opposition to the potash was very great, we were compelled to forcibly hold him and administer a dose of chloral per rectum and wait until he was under its influence before he would take the bromide. During the first two weeks chloral was given sometimes as often as four or five times in the twenty-four hours, to quiet excitement and produce sleep. During the four weeks he was under treatment, he was systematically nourished with beef essence, milk, etc.

When all symptoms of tetanus had passed away, we noticed that what appeared in this patient to be obstinacy at first, was now a true mania, it requiring the combined efforts of four or five men to restrain him. This latter condition gradually subsided, and he was finally sent to the asylum, and is now there a hopeless imbecile.

Case 4.—On August 25, 1886, I saw Ben. B., white, aged 8 years; stout and healthy. He had just received a badly lacerated and contused wound of the fingers of the right hand, by its being caught in a forty-knife cutting box. The ring finger was cut through the bone in two places, the middle finger was cut through in three places, and in each place the finger only hung by the skin and a few tendons. The index finger was lacerated, contused and broken, involving its second and third phalanx. There was so little vitality in the injured portion of this finger that it was removed on the 29th, at its middle joint, four days after injury, simply by twisting it off with the forceps. As there was not sufficient flesh to cover the bone, it was deemed best not to cut off the protruding bone, but leave it to be covered over by granulation. After this all the wounds progressed quite favorably, those of the other two fingers, which I had brought together, sewed up and put on splints, healing to a great extent by first intention. On September 6, twelve days after injury, my little patient visited me at my office to have his hand dressed, as usual. The granulations had by this time covered over the end of bone and were quite luxuriant. In directing a warm spray of carbolic acid on the granulating surface, for the purpose of cleansing the same, I noticed a peculiar expression of countenance and a sudden contraction of the flexor tendons of the arm. He complained of slight pain at site of wound, and a stiffness of muscle of jaw, together with constricted feeling in throat and chest. This lasted only a moment, accompanied by a look of contentment, or mild form of sardonic laugh. I immediately recognized the trouble as being trismus, and on examining his pulse, found them quite frequent. He was sent home and put to bed, and bromide of potash ordered in five grain doses every two hours.

I informed his father of what I feared would be developed, and promised to call in the afternoon. At my afternoon visit I found my little patient in bed with his jaws stiff, and at intervals of a few minutes they were locked tight, and a general rigidity of muscles of back and abdomen occurred. I immediately advised amputation of the finger at its metacarpo-phalangeal joint. His parents objected, and asked a postponement until next morning, which I very reluctantly consented to. At eleven o'clock that night the father informed me that the tetanic spasms were getting more frequent and of greater severity, and asked me to see him. On my arrival I found an increase both in frequency and severity of the tetanic spasms. With the consent of the parents, I amputated the finger at its metacarpo-phalangeal articulation, dressed the wound, gave a hypodermic of morphine, and ordered bromide of potash in five grain doses every two hours.

On the following day the tetanic spasms were less severe and of not so frequent occurrence. The

bromide of potash was continued as before, and hydrate of chloral given to produce sleep. For the next two days the spasms were light, though easily excited by noise or movement of body.

On the third day after amputation the wound was dressed and found to have healed about one-half by first intention. The other portion looked well. By the evening of the third day the tetanic spasms had gradually grown more severe and opisthotonus was well marked. The potash was increased to 10 grains every two hours, and hydrate of chloral in 5 grain doses given at intervals varying from three to four hours, according to the degree of excitement, etc. From this time on he took 10 grains of bromide of potash every two hours for three weeks, night and day, when it was gradually reduced in dose and given at greater intervals for two weeks more. During all this time hydrate of chloral was given in 5 grain doses either by mouth or rectum, when very much excited or sleep was desired. I think he had an average of four or five doses of chloral in every twenty-four hours. This boy had beef tea, milk, and soft boiled eggs at regular intervals during the whole period of sickness. He was discharged on October 1st, well, having been under treatment for tetanus since Sept. 6th. He made a perfect recovery without any impairment of mind whatever, and is to day as bright a little fellow as one would wish to see.

To summarize: The first case was treated with bromide of potash and chloroform, recovered. The second case with bromide of potash and chloroform, and although the mildest of the four cases, died; I think simply from neglect to keep up the administration of potash. The third case was treated with chloroform, bromide of potash, and chloral, recovered physically, but mentally a wreck; whether the latter was due to the potash, or chloral, or not, I am not prepared to say. The fourth case was treated by amputation, bromide of potash, and chloral, with perfect recovery in every respect.

ESSENTIAL INDIVIDUAL HYGIENE OF A MUNICIPAL POLICE FORCE FOR THE PREVENTION OF PULMONARY DISEASES.

BY GEORGE HOMAN, M.D.,

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Read in the Section in State Medicine, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

The following remarks are not intended to cover the whole field of personal prophylaxis against diseases by members of a municipal police force, but only to direct attention to certain facts that appear to be well established, and which have been observed by me in the two years last past, during which time I have performed the duties of Medical Examiner to the Police Department of the City of St. Louis. The particular matter to the importance of which I desire to call attention, is that of pulmonary hygiene, if it may be so termed, to certain statistics collected by me in regard thereto, and their obvious bearing and indications in the direction of measures to lessen disability and loss of service from avoidable forms of pulmonary diseases.

In the course of my service in connection with the department, it became my duty during the summer of 1885, to make a careful physical examination of all members of the police force of this city below the rank of captain, numbering at that time 482 men. The examination was made by order of the Board of Police Commissioners, the purpose being to ascertain as nearly as possible the exact bodily condition of each member, and to determine the degree of physical soundness and efficiency possessed by every officer examined at that time. Careful measurements of chest dimensions were made in every instance, and every symptom and circumstance denoting pulmonary integrity or infirmity was recorded and duly considered in the final classifications, as to physical standing and ability made when the work of examination was completed.

The average mean girth of chest at the level of one inch above the nipples of all the men examined, was found to be something above thirty-eight inches, (38.″1375)—the extremes being the greatest possible degree of respiratory expansion and contraction of the thoracic cavity upon forced inhalation and expiration. The measurements in every case were taken with a steel line with all clothing removed from the upper half of the body. The average degree of expansibility of the chest was found to be 2.759 inches, this measurement indicating the degree of mobility or extent of free play of the chest walls. As correlative facts of interest in this connection, it may be stated that the average individual stature was 5′8.″22, the weight 167.36 pounds, and the average waist girth 34.131 inches.

Examination of the mortality record of the department, and of the morbility returns of the force, so far as they were ascertainable, showed that among the causes of police disability pulmonary affections hold a leading position, and it has been my desire to ascertain, if possible, if there is any determinable relation between these potent forms of mischief and tax upon vitality and efficiency, and the routine duties of individual members, and the discipline and code of management under which the department is operated.

The daily routine duty required of a patrolman in this city is twelve hours' service out of the twenty-four, extending from 11 o'clock A.M. or P.M. as the case may be, the change from day work to night work, and *vice versa* being made every three months. Aside from one hour's drill per week in the manual of arms during the winter months, no bodily or athletic exercise is required of a policeman other than that involved in patrolling the district assigned to him, with the incidental exertions needed on his part to maintain law and order therein; the result being that there is usually plentiful foot and leg exercise to the neglect of other highly important parts of the body.

The standing force comprises in its members many veterans, some twenty-six of whom have seen more

than twenty years of police service in connection with this department. These veteran members, while now invalided to a great extent and exempted from any but the lightest duties, no doubt represent the survival of the better physical element of a contingent recruited under rather lax regulations as concerns inspection and physical qualifications; and, indeed, it may be said that at no time have the regulations governing appointments to the force been very stringent, or the requirements in this respect exacting.

The mingling of the physical statistics of the aged, invalided and veteran elements with those of the healthy, younger and more vigorous men tends, of course, to deteriorate the statistical effective standing of the force as a whole; but, while this is necessary in order to a correct representation of existing facts, it may be said in mitigation of the effect on the showing thus made that 277 members, or over 57 per cent. of the total force, have seen less than ten years' service; and 152, or over 31 per cent. have been members less than five years, the total of those who have seen ten years' service and more being 205.

The numerical and physical composition of the force naturally fluctuates somewhat through deaths, dismissals, and resignations, about six recruits a month on an average having been added during the last two years.

In endeavoring to determine the special influence, if any, of police life and duty upon the pulmonary organs and functions, I have carefully compared the ascertained data in this respect of the regular members of the force and those added from time to time to fill vacancies in the ranks. The average age of the men at the time of the department examination was a little over 38 years, while the average age of recruits is 28 years.

In making good the losses of the force it is the usage of the Board of Commissioners to appoint the applicants for a probationary period of six months if he be found qualified after rigid physical examination for such appointment, the department being given the benefit of any doubt that may exist in the mind of the examiner. After the expiration of the probationary term he is eligible to appointment as a regular member of the force. Not infrequently before such appointment he is ordered up for a second examination, and it has been in such cases that I have been most forcibly impressed with the influence of police life and regulations in inducing tendencies to pulmonary weakening, and foreshadowings of pulmonic default and danger.

I have already stated the average girth of chest, and thoracic expansion of St. Louis policemen. The same measurements of 122 recruits show in respect to the first dimension a difference in favor of the latter of about one quarter of an inch—and the average chest expansion of the latter being 3."395 to 2."759 in the regular policeman. The averaged mean girth of chest in the recruit is 38."354 to 38."1375 of the patrolman—a difference not strikingly great and of much less serious import in the sense in which the matter is being now considered than is the former, as a considerable gain in mean chest girth may be noted while the absolute breathing capacity of the chest cavity, and free play of its walls are diminished —the increased girth being due to extra-costal causes, usually to overlying fat, and for this reason deductions from a mere increase of measurement around the chest must be deceptive as an indication of soundness of the lungs, the ascertained degree of normal expansibility constituting the only decisive test so far as measurement is concerned.

Additions to the regular force are usually made from among men employed as laborers, mechanics, porters, teamsters, and like occupations in which the muscles of the arms and associated parts are brought into more or less constant vigorous exercise. Upon assignment to police duty the accustomed symmetrical use of all the working muscles is lost as compared with previous occupation, walking being all that is required of the officer, and the hurtful effect of the change, after the lapse of a few months even, upon pulmonary expansibility and capacity is most marked. In repeated instances applicants for appointment coming from occupations requiring all-around exercise, and in whom the respiratory apparatus was found to be of superior excellence as regards both free expansibility and normal breathing sounds, after six months police service the normal expansion had decreased from one-half to one inch, or even more, and the comparative rigidity of the chest walls was accompanied by impaired or roughened vesicular murmur, with symptoms of circumscribed congestions, incipient catarrhs, and other signs of sluggish pulmonic circulation,—the girth of the chest being usually not sensibly changed.

This condition was so uniformly present in those cases in which the subject had resorted to no gymnastic exercise to maintain the initial good condition of the chest,.as to at once attract my attention, and the good results that have followed the employment of means to increase the capacity of the chest, to develop and strengthen the auxiliary muscles of respiration, and to favor the free play, suppleness, and expansibility of the chest walls have been equally manifest. These results have appeared not only in a betterment of chest measure, but in the appearance and establishment of normal respiratory sounds, in increased freedom from coughs and colds, in improved general circulation, in appetite, digestion, nutrition and excretion—in a word there was a general exaltation of physical vigor and power that was consciously felt and enjoyed by the subject.

In instances where the applicant fell short of the standard through pulmonary defect remediable in character, the counsel given by me to overcome the difficulty has been followed for some months with the constant result of improvement in wind, and deepening of respiratory capacity. The means recommended to this end have been the systematic judicious use of hand weights, sand bags, clubs, and other devices for symmetrical physical exercise and development found in gymnasiums.

From all the foregoing considerations my opinion is, that the omission from the department equipment of means for regular systematic chest and arm exercise, and the enforcement of their use as a necessary

part of routine duty in any police force on a service-basis similar to the one in this city, indicates a point of vital weakness, and that such lack constitutes an unguarded avenue by which a host of physical evils assail the municipal defenders of life and property. A fair degree of speed with good wind endurance is recognized as being necessary physical qualifications of the perfect officer, and these requisites can only be secured by appropriate gymnastic drill designed to exercise and harmoniously develop and preserve the entire body.

It is my deliberate conviction, reached after a careful study of the records of two years, together with other material data, that, aside from the natural decline of chest elasticity which accompanies advancing years, there is a certain percentage of loss in this respect in the police force of this city that may be justly ascribed directly to general physical conditions incidental to the performance of duty under existing regulations; and I believe that this loss represents a definite and calculable proportion of the total impairment of service by sickness in the force. Furthermore, I believe that the cause of this waste and loss in vitality, time, and effective employment, bears a constant and definite relation to defects and errors of long standing in the physical regulation of the department—that this wastage is largely avoidable, and that the shrinkage or impairment of chest capacity, due to faulty physical conditions in the constitution of the department, means so much loss in time and so much loss in money which might be saved by a modification of discipline and the introduction of simple means for the attainment of the desired end. The money loss to an employer from a case of pneumonia or pleurisy in an employé may be computed, and the relative cost to the possible effective police total of all forms of preventable lung maladies may be closely reckoned, and the value of the results of preventive medicine, or pulmonary hygiene, be determined on a financial basis. For if, by a practicable modification of existing regulations and adjustment of means to ends, an average increase in breathing capacity of say one-half of an inch per man could be secured to the entire force, it is my judgment that the loss of time from pulmonary troubles would be decreased at least one-third, while the gain in general vigor, morale, and physical power would be not less than fifty per cent.; and, certainly, the money equivalent of this gain would represent many hundred dollars annually, not to speak of the decreased amount of physical suffering, the increased ability to perform duty, and the prolongation of years of effective service to the veterans of the force.

It is but simple justice to say that the efforts of the present Board of Police Commissioners have been uniformly directed toward the achievement of reforms which would include the ends herein suggested—to the correction of organic faults in the department, and to elevating the standard of physical vigor and efficiency of the police force of this city.

EMBOLI—THE SEQUALÆ OF TWO CASES OF LABOR.

BY W. L. SCHENCK, M.D.,
OF OSAGE CITY, KANSAS.

Recognizing the advantages that arise from an interchange of opinions upon the etiological and pathological conditions and therapeutic results observed in our daily routine of practice, I take pleasure in reporting the following cases.

On Sept. 17, 1886, I was called to see Mrs. C., æt. 25, in consultation with Dr. Artz. She was a delicate little woman, but with fair general health; of English birth, and for five years a resident of Kansas. She was living on a rolling prairie, half a mile from any other house, with all the surroundings healthful, excepting that the house was over-crowded with occupants. She and her husband occupied a good sized and well ventilated room, with a south and east front, which, however, was over-crowded with various articles of furniture. She had been delivered five days before of her first child. The labor, though tedious, exhausting and followed by more than ordinary hæmorrhage, was in all respects normal. The lochia was abundant, and there was no unusual tenderness in the genital organs. She had slight fever and cough, with pain and dulness in the right side of the chest. There was great anxiety and a nervousness that bordered on hysteria. There had been no exposure and no imprudence in her management, unless it be considered imprudent to neglect some of the impossible directions laid down by some distinguished gynecologists.

On Sept. 22, I was called again to see Mrs. C., and learned that after my former visit she had promptly developed lobar pneumonia of an asthenic type, involving about half the right lung.

Oct. 20. Was requested to take charge of the case, Dr. A. being sick. The pulmonary inflammation had subsided, though there remained considerable cough and expectoration. From continued recumbency she had developed serious and somewhat peculiar bed-sores. There was a slight abrasion about the middle of either nates, beneath and about which, extending down to the muscles and across the lower end of the sacrum, the tissues were dead and sloughing. There was tenderness and enlargement of the crural vessels of the left leg, some pain in the popliteal space, and marked phlegmasia of the calf. This condition was first noticed two days before.

Nov. 4. Though convalescing nicely from her former troubles and visits discontinued, I was called again to find her with inflammation of two-thirds of the right breast, followed by small multiple abscesses. There had been no exposure, the foot not having been placed on the floor since the occurrence of the phlegmasia.

Nov. 20, 1887. I was called to see Mrs. S., a German woman, aged 37 years. Having had eleven premature deliveries and no living children, she was far from being vigorous. She was advanced 250 days in her twelfth pregnancy. Had been confined to her bed eight days, and during that time had felt no motion. No fœtal heart sounds recognizable. Labor was progressing slowly, retarded by an un-

yielding cervix, and was completed in twelve hours. The placenta was promptly expelled, but was followed by an active hæmorrhage that required a second injection of hot water to arrest it. Antiseptic napkins were kept over the vulva, and the vagina washed out every twelve hours with a three per cent. solution of carbolic acid. The patient doing well, necessary directions were given and visits discontinued on the third day.

Nov. 29. Was recalled at 1 A.M. Found the patient, who had not been out of bed or exposed to any extraneous impression that would tend to local irritation or inflammation, had been, without premonition, seized with intense pain in the right lung and pleura. There was agonizing dyspnœa, superficial, hurried and anxious breathing, pulse feeble and rapid (150), and temperature 101°F. The lochia was free and the generative organs in good condition. A hypodermic injection of morphia, with elix. val. ammonia and hot jacket poultices gave relief. She was treated *secundam artem* until Dec. 8, when visits were discontinned.

Dec. 11. Was recalled to find the patient with phlegmasia dolens. The calf of the left leg was irrecusably pinned to the bone, swollen and tender, with tenderness along the entire track of the crural vessels. Treatment was prompt and there was a gradual subsidence of symptoms.

Dec. 18. Sent for in haste. Found the patient suffering from severe pain and great tenderness in the region of the sigmoid flexure of the colon, with corresponding depression and disturbance in the circulation. With hot fomentations, anodynes, stimulants and antiseptics the patient was relieved and made a favorable recovery.

These cases are not reported for the purpose of detailing treatment, which was adapted to the symptoms and pathological expressions as apprehended, using such agents as carbonate of ammonia freely, sulphocarbonate of soda, sulp. quinia, tr. ferri chlorid., etc., but rather for speculation upon cause and pathology. Coming near together and quite unique they were of more than ordinary interest.

Whilst various causes, other than those consequent upon the sequalæ of labor may give rise to phlegmasia dolens, it is so largely a sequent of labor that we look to the conditions then present for its typical cause. The decomposing contents of the uterus and vagina, through the denuded inner surface of the one and the abrasions in the other find ready ingress to the circulation, when they may give rise to such diseases as puerperal fever, or may cause embolism or thrombus; for, as Dr. H. Lee has shown by ample experiment, blood admixed with purulent matter will coagulate much sooner than when left without such admixture. And so the experiments of Dr. McKenzie demonstrated that the obstruction of the veins met with in phlegmasia may be excited by various unhealthy matters in the blood, and that its cause is to be sought for in a vitiation of the circulation rather than in injury, inflammation or other diseases of the veins. Dr. Tilbury Fox, in two papers read before the London Obstetrical Society in 1861, evolves as one of his conclusions: "The rapid ingress of abnormal fluid suddenly and in large amount will cause instantaneous coagulation of blood, and that large drains from the system are followed by rapid and compensating absorption."

In labors associated with excessive hæmorrhage or other unusual sources of exhaustion, the uterine tissues are relaxed and there is profuse lochia with excess of decomposing detritus. The depleted circulation takes up with avidity whatever is within its reach. In the poisoned blood, consequent upon this, rapid osmosis is sufficient cause for the formation of coagula, either in the form of emboli or thrombi, which since the investigations of Virchow are considered the sufficient if not the sole cause of phlegmasia dolens. But why should we confine the embolus or thrombus to the crural vein? If the morbid material inducing it enters the portal circulation it must go thence through the liver to the vena cava, through the right side of the heart into the pulmonary artery, through the lung to the left side of the heart, through the aorta to the distal extremity of the arterial circulation and through the capillaries of the leg to be returned as far as the crural vein, where, perhaps from pressure of the uterus or a loaded sigmoid flexure, or the narrowness of the crural ring, the passage of the blood is obstructed and a thrombus formed, either by the accumulation of emboli or by coagula forming on the venous walls. While certain vessels, from location or construction may be specially liable to obstruction from thrombus or emboli, when the circulation receives those poisons that tend to coagulation can we with any certainty predicate where the burden will fall?

A much-lamented President of the United States was shot by an assassin, standing six feet in his rear. A No. 42 conical ball, from an English bull-dog pistol, went crashing through a floating rib, arrested only by its passage through the first lumbar vertabræ. While Bliss and his associates, supposing it had been deflected from its course by the rib, an intercostal muscle, or perhaps the liver, and were locating it with their "plumbometer" in the right iliac region, the decomposing tissues burrowing along its track were manifesting their presence in distant parts of the body. So when a circulation, poisoned with decomposing lochia, or other contamination shall presage embolus or thrombus there is no law whereby their lodgement shall be restricted to any given locality.

A coagulum arrested in the crural vein may cause a phlegmasia and its peculiar milk-white swelling from obstruction of the lymphatics, and the dolens or partial paralysis from pressure upon the nerves, and there may be crural phlebitis, but the emboli are not necessarily confined to the crural veins, and even when thrombus has occurred then it may be broken up into emboli that may manifest their presence in distant parts, just as cancer cells escaping from a cancer of the stomach may be arrested in the liver, or escaping thence be lodged in the capillary circulation of the pulmonary artery or elsewhere. So the emboli consequent upon the causes of which I have spoken may be arrested in the liver, lung, mesentery, brain, mammary gland or crural vein.

Austin Flint, "Practice of Medicine" p. 78, says: "The embolic changes, embraced under the name of infarctus, in the comprehensive sense of the term, are especially liable to occur in the spleen, kidneys, lungs, liver and brain, . . . In the lungs small extraversations of blood, circumscribed gangrene, lobular pneumonia and little abscesses are local events attributable to pulmonary embolism."

In the cases reported we were unable to find other cause for the various lesions noted than a poisoned circulation ultimating in embolism. If we are correct they are of unusual interest in illustrating the varied phenomena resulting from that cause. The patients exhausted and depleted by previous disease, labor and uterine hæmorrhages, their excessive lochial discharges found ready admission to the circulation, causing the formation of emboli. In both cases the emboli entered the right lung through the pulmonary artery and were lodged in its capillary distribution, ultimating in pneumonia. In both cases they collected in the crural vein producing thrombus and phlegmasia dolens; in one case inflammation and multiple abscess of the right mammary gland, and in the other embolism of the mesenteric gland.

SYPHILIS, MARRIAGE, AND DIVORCE.

Read before the Section of Practice of Medicine, Materia Medica and Physiology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY JOHN V. SHOEMAKER, A.M., M.D.,

OF PHILADELPHIA.

The relation of syphilis to marriage is one of irreconcilable antagonism, and if the old maxim of "once syphilitic, always syphilitic," were true, the conscientious physician would be compelled to forever forbid matrimony to those who have been contaminated by the virus of syphilis. Fortunately, however, syphilis is usually a curable, and in some cases a self-limited disease, and when the system is no longer under its influence marriage is permissible, and even advisable.

When can a person who has had syphilis marry without running the risk of transmitting the disease to his wife and children? Not until he is completely cured. This is, of course, an indefinite reply, but no absolute rule can be made which will meet the indications of every case. Each case must be studied by itself. The age, habits and general condition of the patient, the character and duration of the attack, the nature and extent of the medicinal treatment, and the age and general condition of the other partner in the proposed matrimonial compact, must all be carefully considered.

Syphilis, as a rule, is less severe, and shorter in duration, in the young and robust than in the old, and in those debilitated by anæmia, scrofula, malaria, anxiety, and alcoholic and other excesses. The macular and papular varieties are indicative of a mild type of the disease, while the pustular, bullous and tubercular forms are evidences of its obstinacy and malignancy. The character and amount of the medicinal treatment is also of importance in deciding the question. There are various remedies which possess the power of abating the symptoms of the disease, but mercury and iodide of potassium are the only medicines which can eradicate the disease from the system, and even they must be given continuously or at intervals for a long period.

The age and general condition of the other partner in the intended marriage must also be taken into consideration. Extreme youth, anæmia, debility, or the existence of the strumous or tubercular diathesis, should be regarded as almost insuperable barriers. Robust health, and young, adult age render the system less susceptible to insidious injurious influences.

As a general rule, patients presenting a mild type of syphilis may be permitted to marry within two years or two years and a half after the time of infection, provided they have been under proper mercurial and restorative treatment for eighteen to twenty months, and have not manifested any symptoms of the disease, nor deterioration in general health, during the six or eight months immediately preceding marriage.

The reappearance of the symptoms, or a decline in general health, is a contraindication for the marriage for another extended period.

If the case has been of the malignant variety, characterized by the formation of large pustules, bullæ, tubercles, and rupial sores, medication should be continued for from two and a half to three years, and marriage not allowed for another year, and then only on condition that no suspicious symptoms manifest themselves in the meantime.

Syphilis of the nervous system or of the viscera should preclude marriage for at least five years, during which specific treatment should be thoroughly but judiciously carried out.

If syphilis of any variety unfortunately develop or be contracted after marriage, the utmost care should be taken to avoid communicating it to the innocent party. Sexual relations should be suspended, and kissing and all other familiarities avoided until vigorous specific treatment has removed the lesions and annihilated the poison of the disease. If these precautions be disregarded, and pregnancy unfortunately supervene or evidences of infection appear in the wife, she ought also be placed upon a decided specific and tonic plan of medication, or the most deplorable results will follow.

Syphilis in Relation to Divorce.—Public opinion has been so profoundly shocked by the scandalous facility with which divorces may be obtained in many States, that the tendency of future legislation will be to lessen rather than to increase the number of causes which are to be regarded as justifying a legal dissolution of the matrimonial bond. Care should be taken, however, to prevent the reaction from becoming so extreme as to preclude the addition of salutary amendments to existing laws upon the subject. The sanctity of the marriage contract is not attacked by indicating the various circumstances which impair its integrity. Every civil and ecclesiastical code plainly sets forth a greater or less number of reasons which

either render the marriage contract absolutely null and void, or which justify its limited dissolution. It would be folly, however, to claim that any particular code will be found sufficient for all ages and all nations. Laws must be modified in accordance with the exigencies of the occasion and the habits, virtues, vices and necessities of the people for whom they are made, and the law of divorce is no exception. At present, desertion, cruel treatment, adultery, and various bodily and mental defects are recognized to be so destructive of the peace and happiness characteristic of the true marriage state, that they are declared by law in all countries to justify, if not to necessitate, partial or complete divorce.

There is a more dangerous and more insidious source of domestic misery, however, than any yet named. Syphilis is more subversive of the objects of the matrimonial compact than all the offenses enumeerated upon the statute-book. The principal object of marriage is the propagation of a healthy race. Syphilis poisons the fountain of life at its source. Marriage is presumed to be the bond of affection between two of the noblest of God's creatures. Syphilis converts it into the shackle by which the living is chained to the loathsome dead. The evils which the syphilitic husband entails upon his wife, his offspring and society at large, are so many as to almost defy enumeration.

Is it not, then, right and proper that syphilis should be recognized as first among the causes which justify the innocent party in applying for divorce. It may be objected that the provision relating to adultery as a basis for proceedings in divorce is sufficient to protect the interests of all concerned. Sad experience, however, declares that it is not. The proof of adultery is difficult, and sometimes impossible, to obtain, unless the guilty parties are caught *in flagrante delictu*, and in many cases the disease dates from before marriage. The present active existence of syphilis, however, is readily ascertained. It may be also objected that syphilis may be unwittingly or innocently contracted in the discharge of professional duties, and a hundred accidental ways, and that it would be exceedingly reprehensible to permit such an unfortunate occurrence to be used as a pretext for violating a sacred compact and exposing a blameless person to the derision of the world. This objection is deserving of consideration, but any proposed law could be modified to meet it. No man worthy of the name would insist upon the continuance of marital relations under such circumstances, and no true woman would insist upon partial or complete separation in such a case, unless compelled to do so for self-protection. He or she should. however, be given the legal privilege to do so as a last resource.

The famous Colin Campbell case proves that such an amendment of the law is necessary. The plaintiff, Lord Colin Campbell, applied for an absolute decree of divorce from the defendant, his wife, Lady Mary Campbell, upon the ground of adultery and desertion. The facts as developed by the trial were that, when Lord Colin was married, he was suffering from a complication of venereal disorders, and that as a result of his diseased condition, the consummation of the marriage was followed by a violent attack of metritis and perimetritis, which seriously prostrated the defendant. After a tedious illness she recovered, but refused to permit a renewal of the marital relations. The honorable Lord then determined to humiliate and disgrace her by accusing her of adultery and desertion and applying for a divorce, which he believed his rank and prestige would enable him to obtain at once. Fortunately, however, Lady Mary Campbell had a host of friends who demanded that an exhaustive inquiry should be instituted before any decree would be made. The testimony was published, and popular sympathy was manifested so strongly in behalf of the injured wife that the court dismissed the noble Lord's appeal. Owing to the defect in the law which I have pointed out, Lady Campbell is practically without redress. She has been injured in health, injured in reputation, publicly villified and privately slandered by a miserable wretch whom she is still compelled to call husband.

Is not this anomalous and disgraceful in the extreme? Yet there are many cases continually occurring in all countries in which equal or greater misery is inflicted upon the innocent victims of man's selfishness, ignorance, or brutality. It is high time that the protective ægis of the law should be extended over this numerous and long-suffering class. All that is necessary is the enactment of a clause substantially stating that syphilis shall be sufficient cause for an action for absolute divorce, or for divorce with alimony, at the option of the aggrieved party. It might also be advisable to add an amendment declaring the wilful concealment of syphilis or other venereal diseases at the time of marriage, or communication of their contagion at any time, to be a misdemeanor punishable by fine and imprisonment.

I am aware that these proposals will not now meet with universal approbation, but I am convinced that they will meet with increasing favor in the future, and that it will not be many years before similar or even more stringent and more salutary measures will be incorporated in the statute-books. The fear that some may entertain that public demoralization would be increased by proceedings based upon such an enlargement of the divorce laws would not be realized. The proposed amendments would practically prove most beneficent by their preventive, rather than by their penal character.

MEDICAL PROGRESS.

CARBONATE OF LIME IN CANCER.—DR. PETER HOOD, in an article on "The Administration of Carbonate of Lime as a means of arresting the Growth of Cancerous Tumors," says: Nearly twenty years ago the *Lancet* published a communication from me on the value of carbonate of lime in the form of calcined oyster-shells as a means of arresting the growth of cancerous tumors, and I am anxious once more to call attention to the subject, and to urge upon those who possess the necessary facilities that

a more extended trial should be given to this agent than it appears yet to have received. My own opportunities of employing it in suitable cases have not been large, but the results which I have witnessed have been sufficiently remarkable to justify me in seeking for them a more extended publicity. In the paper referred to I related in detail the case of a lady nearly 80 years of age, who was the subject of schirrus of the breast, and in whom the growth sloughed away and left a healthy surface after a course of carbonate of lime, administered in accordance with a recipe which was current in her family. She manufactured her carbonate of lime by baking oyster shells in an oven and then scraping off the calcined white lining of the concave shell. The substance thus obtained was reduced to powder, and as much as would lie on a shilling was taken once or twice a day in a little warm water or tea. It was said that perseverance for at least three months was necessary before any good result was to be expected. I presume that the powder would be almost pure carbonate of lime, but it might possibly contain a small admixture of iodine. The immediate cause of the publication of my paper was a conversation with Mr. (now Sir) Spencer Wells, to whom I related the particulars of the case above mentioned, and of one or two others which had fallen under my notice, and who suggested that the beneficial action of the powder might be due to the lime it contained. He told me that he had used lime largely in the treatment of uterine fibroids and other tumors, and that he was convinced that processes of atrophy and calcification resembling the spontaneous change or degeneration sometimes observed in them were often produced or promoted by its action. He added that he believed the change commenced in the coats of the arteries, by which the tumors were supplied with blood, and that these coats underwent first an atheromatous and subsequently a calcareous degeneration, in either case with a diminution of the calibre of the vessel and a lessened capacity for the conveyance of blood.

After the appearance of my paper I was applied to by several persons, with an inquiry as to whether their cases were suitable for the employment of the remedy; but in most of these instances I subsequently found that it had been taken for only a few weeks, and then abandoned because no result was apparent. I should not hope for manifest benefit in any instance under three months of persistent treatment. A notable exception to the ordinary want of perseverance was furnished by the wife of a physician practising at Reading. This lady was the subject of a well-marked schirrus of the breast, which I had myself an opportunity of examining. After a fair and persistent trial of the calcined shell powder for three months, her husband reported to me that "the tumor had ceased growing and that she suffered no pain." She continued to take the powder for several months longer, and for several years her husband paid me an annual visit, always giving the same account, "that his wife never suffered any inconvenience or pain from her disease, the progress of which had been stopped."

The ordinary history of true cancer is such a dismal record of failure, that I think even a few instances in which benefit has been derived from a harmless remedy should encourage the profession to make trial of it in all suitable cases. It would probably be inexpedient, generally speaking, to disclose the nature of the medicine, and the public mind is by degrees becoming permeated by the knowledge that many important medical actions can only be gradually produced. We have no difficulty in inducing patients to submit to prolonged courses of mercury in the treatment of syphilis, and there is no reason why they should not do the same in a malady which, if possible, is even more formidable. Up to the present time the narratives of cures of cancer have been chiefly suggestive of errors of diagnosis, and no assurance of the value of any proposed remedy can be obtained until it has been used in a sufficient number of instances to exclude the possibility of such errors having been committed in the majority of them. Although the experience of Sir Spencer Wells with fibroids points to the probability of a beneficial action upon soft and vascular growths, those which I should myself select for the purpose of further investigation would be typical examples of breast schirrus, adherent tumors of stony hardness, attended by retraction of the nipple and lancinating pain. About the nature of such it would seldom be possible to entertain a doubt. As an example of the uncertainty which may overhang the true characters of growths which do not present the symptoms above described, I may mention that I was once consulted by a lady living in the north of England, who had a swelling in her breast which had been pronounced to be cancer by her family medical attendant, and also by two consultants called in from the neighboring country town. She was urged to submit to an operation, but, before consenting she came to London for further advice. She paid separate visits to Sir James Paget, to the late Mr. Skey, and to me. I was the first whom she visited, and I gave an opinion that the tumor was a harmless one and might be let alone. Her second visit was to Mr. Skey, who said without hesitation that it was a cancer, and advised removal. Her third visit was to Sir James Paget, who said that the growth was innocent. It was let alone and the patient has had no further trouble from it for twenty years. Again, I was lately consulted about the case of a well-known nobleman, who had a soft growth in the front of his chest over the upper part of the sternum, which quickly attained a considerable size, and was pronounced to be malignant by eminent authorities. It disappeared entirely under a course of small doses of the perchloride of mercury.

It is therefore not in cases which admit of any reasonable doubt of their nature that I would desire to urge a trial of the lime powder upon the profession. There are hundreds of instances of unmistakable cancer in which an operation, if performed, may perhaps for a time diminish suffering or may prolong life, but in which it cannot afford any well grounded hope of restoration to health. For all such I would say that the lime ought to be persistently and fairly

tried. It can do no possible harm, it need not interfere with any remedies for the present relief of pain, its action can be referred to a perfectly intelligible and probable hypothesis, and it has been of unquestionable utility in a sufficient number of cases to warrant us in reposing some confidence in its use. We have a great hospital devoted to cancer, and cancer wards in others also; and I think the time has come when this simple means should be fairly tested by the profession. It is not long since we witnessed an extraordinary eagerness to try the Chian turpentine, which was so much extolled by Dr. Clay, and in support of which the *primâ facie* case was nothing like so strong as that in favor of the remedy to which I desire once more to call attention. —*Lancet*, May 7, 1887.

THE CONTAGIUM OF SCARLET FEVER.—The remarkable chain of evidence whereby DR. KLEIN has been enabled to substantiate the results of Mr. Power's investigation upon the transmission of scarlet fever direct to man from the cow, seems to leave little room for scepticism, that in the streptococcus met with by Dr. Klein, we have the effective agent in the etiology of this disease; and, scanty as prior observations are, imperfect as many of them have been, it is noteworthy that hitherto the scarlatinal microbe has been described as a micrococcus. Coze and Feltz found micrococci in scarlatinal blood; Cornil in the urine in scarlatinal nephritis; Babes describes streptococci in post-scarlatinal inflammatory products; and Pohl-Pincus found "very minute micrococci adhering to the scales of the desquamating epidermis in scarlatina" (von Klein: "Micro-organisms," third edition). The isolation, cultivation, and successful inoculations practised by Klein, however, far outweigh all such partial observations. But, as in the case of diphtheria, so here, it would seem that other observers have arrived at the conclusion that the scarlatinal microbe is a bacillus, and not a micrococcus. Drs. Jamieson and Edington, of Edinburgh University have completed a series of observations, which arrive at this result: their plan of procedure being to examine the blood of scarlet fever patients as early as possible, to sterilize an area of skin and protect it from contamination till desquamation occurs, and then to examine the desquamated epithelia for organisms. They found a bacillus in each of these media, and succeeded in reproducing a disease like scarlet fever in calves and other animals inoculated with pure cultivations of this bacillus. Further tests by examination of the blood of the inoculated animals and pure cultivations therefrom also yielded positive results. Until the details of their research are published it would not be fitting to attempt any critical comparison between them and those obtained by Dr. Klein. The fact that the blood of scarlatinal patients has been frequently examined without result makes it at first sight more probable that the minuter organism has been overlooked; but much also depends upon the technical skill of the observer, and bacteriological methods are daily being perfected. It is curious that a disease so obviously contagious as scarlet fever should hitherto have baffled the attempts made to isolate its virus, and almost simultaneously investigations should be in progress with this object, and with such apparently conflicting results.—*Lancet*, June 11, 1887.

SUCTION-PUMP ACTION OF THE MAMMALIAN HEART.—That the heart acts not only as a force-pump during its systole, but during its diastole actively expands and thus gives rise to a negative pressure, which causes blood to move from the systemic veins to the right auricle, has long been maintained. But the question still remains whether, after the thoracic cavity has been opened, the heart expands in diastole passively in consequence of the positive pressure exerted by blood drivers into its veins, or actively, and in the latter case, by causing a negative pressure, causes blood to flow towards itself, even when there is no positive pressure in the venæ cavæ.

The outcome of the experiments of DRS. H. NEWELL MARTIN and FRANK DONALDSON is this: that once the "aspiration of the thorax" has been eliminated, the right auricle of the mammalian heart will not receive blood unless supplied to it under a decided, if small, positive pressure. While the heart in the closed thoracic cavity may, and probably does, act as a suction-pump, this is not due directly to an active expanding force of the heart, but is the secondary result of the pneumatic conditions prevailing within the normal closed chest cavity. Any cause diminishing thoracic aspiration must, therefore, greatly hinder the work of the heart; and it is probably more in this manner that the circulation is impeded in certain cases of hydro or pneumothorax than by direct pressure exerted on the heart itself.—*Studies from Biolog. Lab. Johns Hopkins University*, Vol. IV, No. 1.

HYPODERMIC INJECTIONS OF COCAINE IN TETANUS. —DR. M. LOPEZ reports the following case in *El Genio Medico Quirurgico*, for February 7, 1887. M. G., 50, laborer, after working in the wet and cold, complained of rheumatic pains of back and limbs. Three days later he had marked opisthotonus and painful cramps, and all the symptoms of idiopathic tetanus. Chlorol hydrate and morphine were prescribed. For three days the patient was kept under the influence of these drugs, with the result that the pain was lessened, but the muscular rigidity and cramps increased. He now became unable to swallow, and death seemed imminent. Morphine was injected hypodermically, but was followed by no amelioration of the symptoms. Three syringefuls of the mixed solutions of morphine and cocaine (each 5 per cent.) were then injected. The effect was immediate. After two hours, he could move the limbs, turn in bed, and open his mouth. On the next day he was going on well; slight trismus and stiffness of the neck remained. On both sides of the neck, and at the angle of the jaw, a fourth part of the syringeful of the same solution was injected. On the next day all the symptoms had disappeared. The patient rapidly regained strength.—*London Medical Record*, May 16, 1887.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, JULY 16, 1887.

THE MANAGEMENT OF EMPYEMA.

A short time ago a very interesting discussion on this subject was had at a meeting of the Academy of Medicine of New York. Were there nothing else to show the importance of the subject, the fact that it was made a special subject of discussion in the Section of Theory and Practice of Medicine of the Academy is sufficient. And it may be said that almost the last days of his promising life were spent by the lamented E. Darwin Hudson in the preparation of the work for that evening, in order to secure a representative discussion.

One of the most important papers read was by DR. L. EMMETT HOLT, on "Spontaneous Absorption in Empyema in Children, and the relative Advantage in Children of Aspiration and Early Incision." While spontaneous absorption may possibly occur it is very rare, and it is evident that the chances of recovery by Nature's unaided efforts are very small. The indication, then, is to get rid of the pus in the easiest and safest manner; and the best methods for doing this are aspiration and free incision. The following advantages are claimed for the former: 1. Simplicity; 2. Freedom from danger; 3. That it does not remove the fluid rapidly; 4. That it does not require general anæsthenia; 5. That it does not require the confinement of the patient to bed; 6. That many cases are cured by aspiration alone. The disadvantages of the method are: 1. The entire quantity of fluid cannot be removed by this means; 2. When septa exist in the pleural cavity but one division of the latter may be evacuated; 3. The terror often excited in children, especially when the aspiration has to be repeated, is a serious obstacle to its success; 4. There are certain cases in which aspiration is not available, and if the case is allowed to go on for a considerable time without evacuation, septicæmia and other serious consequences may result.

Among the advantages of incision are, its universal applicability, the fact that it enables the surgeon to explore the pleural cavity thoroughly. As to the use of general anæsthetics, Dr. Holt thought they should not be resorted to, as he knows of two cases (although both in adults) in which death resulted from rupture of a bronchus. Local anæsthesia is, therefore to be preferred on the ground of safety. While the exposure of the cavity and the admission of air were formerly well-founded objections to incision, since the introduction of antiseptics this is no longer the case. Of 63 cases collected in which the operation was done under strict antiseptic precautions there were but two deaths, and, contrasting this happy result with former statistics, he thinks that no more complete evidence could be furnished as to the advantages of anæsthetics. As to duration, out of 80 cases in which antiseptics are used, 5 cases lasted four months or more; and in the remaining 75, the average duration was six weeks. In 21 it was one month or less. In cases in which antiseptics were not employed the average duration was six months.

Dr. Holt's conclusions are somewhat as follows: 1. All methods yield better results than non-interference. 2. No one should ever be left to the unaided efforts of nature. 3. Aspiration holds out a possible chance of cure, especially if the empyema is localized. 4. If, after two aspirations, the fluid continues to accumulate, this method should not be persisted in. 5. In large effusions it is well to make an aspiration before resorting to incision. 6. In all other cases a free incision should be made, preferably under local anæsthesia. Early incision, perfect drainage, and complete antisepsis, in the words of Wagner, offer the best chance of success in dealing with empyema.

DR. HUBER, in a paper on "Acute Empyema in Children," advocated the use of the hypodermatic syringe for diagnostic purposes, and expressed the opinion that the more promptly surgical interference was made, in general, the better the results would be; provided this be not done during the first few days of the attack. As a rule, it is better to wait until a week or ten days have passed, so as to allow the acute febrile symptoms to subside, and give the patient a chance to rally. Dr. Huber agrees that aspiration should first be resorted to, but if the result is not satisfactory, incision should not be long de-

layed, as the disease is characterized by fibrinous deposits as well as by purulent effusion, and the fibrin may decompose and cause sepsis. Local anæsthesia is secured by cocaine, and in order to prevent the drainage-tube from slipping into the cavity he uses Baxter's method. Injections of bichloride solution (1–5,000) are used in all his cases. The retraction of the chest remaining on the affected side may be overcome by suitable gymnastics and exercise in the open air.

In a general consideration of the *surgical treatment of empyema*, DR. ROBERT ABBE considered aspiration of more service in children than in adults, and as it is somewhat repugnant to the surgical mind to leave even a small quantity of pus in a place like the pleural cavity, he thinks complete evacuation should be practised as soon as it is evident that aspiration is insufficient to effect a cure. The best results thus far have been obtained from free incision. In doing this he uses a carbolic spray produced by a simple hand-bulb. Two large drainage-tubes, of the thickness of the little finger, are advisable; and he usually dresses the wound with bichloride gauze and iodoform. A thorough outlet is essential, and the other important factor in the success of the treatment is the purity of the wound. In the great majority of cases he does not think it necessary to inject the cavity; but when there is a hectic condition antiseptic injections, followed by hot-water ones, should be employed. Two serious results have been observed from injections, namely: toxic symptoms from the agents used, and sudden death, due probably either to thrombosis or reflex influence. The drainage-tube occasionally causes denudation of the periosteum of a rib, which has been erroneously designated as necrosis. When this occurs resection must be done, but he thinks it unjustifiable to resect at first. When there is decomposing fibrin, resection is sometimes called for in order to secure free irrigation, and occasionally when a suppurating cavity remains after empyema, Estlander's operation of resecting several ribs is very satisfactory. As regards anæsthesia for incision, he thinks that in children a few whiffs of chloroform answer perfectly well, but in adults local anæsthesia with cocaine is preferable.

DR. ALFRED L. LOOMIS believes that acute empyema is very common in children, and when he finds that a child's chest fills rapidly he feels pretty confident that empyema is present. The treatment which he adopts is, in the main, such as has already been described. Acute empyema in adults is a totally different affection, being an infectious and dangerous disease, often proving rapidly fatal, and it cannot be cut short by removing the products of inflammation. After the acute stage has passed, however, he thinks incision does good, and is called for. Chronic empyema is not a simple pleurisy. We have not merely the pleural cavity to deal with, but a serious constitutional condition, and it is necessary to sustain the patient's vital forces in every possible way.

DR. JOSEPH E. WINTERS differed materially from Dr. Loomis and some of the other speakers in his views of empyema in children. He has careful records of 90 cases of pleurisy in children, and in only 4 of these was there empyema. In the latter this condition already existed when the patients first came under observation, and of the remaining 86 cases, not a single one terminated in purulent effusion. In simple pleurisy the temperature sometimes rose to 103° and 104°; but under rest, hot applications, and sedatives, the cases almost all terminated in resolution in the course of a week or so, and in no case under his care has empyema resulted. Two cases were operated on account of the mechanical pressure produced by the large effusion present, and while they were both fatal, at the autopsy no pus was found in either case. He has never seen a case of empyema in a child in which there was not an abundance of serum, and he therefore thinks that the fluid in such cases is capable of absorption. Hence the condition is very different from that existing in empyema in adults, and he does not deem it necessary to resort to surgical interference except to relieve the effects of mechanical pressure on the viscera. He also objects seriously to the use of the hypodermatic syringe or the aspirator, unless there is surgical necessity, as he thinks the entrance of the needle into the pleural cavity is a very common means of turning a simple effusion into empyema, an opinion in which Dr. Francis Delafield coincides. When in cases of empyema operative procedure is called for, he thinks that free incision was greatly preferable to aspiration.

Cases have been known in which hæmorrhage after incision for empyema was sufficient to cause death. DR. T. HERRING BURCHARD mentioned two such cases, both most probably cases of capillary hæmorrhage, such as is sometimes seen after sudden and complete evacuation of a distended bladder. As suggested by DR. HEINEMAN, this may be prevented by injecting a certain amount of fluid into the pleural cavity, and allowing it to remain. In the same way may the coughing set up by the removal of fluid from the pleural cavity be relieved.

MEDICAL COLLEGES IN GOOD STANDING.

The first part of the first *Section* of the Act to Regulate the Practice of Medicine in the State of Illinois reads as follows:

"That no person shall practice medicine in any of its departments in this State unless such person possesses the qualifications required by this Act. If a graduate in medicine, he shall present his diploma to the State Board of Health for verification as to its genuineness. If the diploma is found genuine, and from a legally chartered medical institution *in good standing*, and if the person named therein be the person claiming and presenting the same, the State Board of Health shall issue its certificate to that effect signed by all the members thereof, and such certificate shall be conclusive evidence as to the right of the lawful holder of the same to practice medicine in this State."

At the regular quarterly meeting of the Illinois State Board of Health held in the Grand Pacific Hotel, Chicago, July 8, 1887, the following resolution was adopted:

"*Resolved*, That the phrase 'medical colleges (institutions) in good standing,' in the first Section of the Act to regulate the practice of medicine, approved June 16, 1887, is hereby defined to include only those colleges which shall, after the sessions of 1890–91, require four years of professional study, including any time spent with a preceptor, and three regular courses of lectures as conditions of graduation."

The questions, what is the legitimate meaning of the phrase "a legally chartered medical institution in good standing," and what the evidence required to establish its "good standing"? are assuming an importance that will, at no distant day, compel answers from some tribunal whose decisions will command respectful obedience. Does the *good standing* of a medical institution depend upon the fact that it faithfully and honorably complies with the requirements of its charter and the promises of its annual announcements to the public, and that its graduates are cordially received and recognized by the medical profession and the community? Was that the sense in which the Legislature of Illinois used the words "good standing" in the law for regulating the practice of medicine; or were these two apparently innocent words intended to confer upon the Illinois State Board of Health full *legislative power* to dictate alterations and amendments in the powers, duties and curriculums of all the medical colleges in the United States, in order to place them in the attitude of "good standing" before that Board? And not only this, but also the extraordinary power of legislating in advance and defining what the medical educational institutions must do three years hence as set forth in the resolution quoted above. The resolution declares "that the phrase 'medical colleges in good standing,' . . . . is hereby defined to include only those colleges which shall, after the sessions of 1890–91, require four years of professional study, ... and three regular courses of lectures as conditions of graduation." Having *hereby* and *now*, declared that *only* those medical colleges which comply with certain specified conditions in 1890–91, shall be recognized as in good standing, will the Board go on recognizing the diplomas of colleges *not in good standing* for the next three years; or is the concentrated wisdom of homœopathy, eclecticism and regular medicine, as combined in the Illinois State Board of Health, equal to the task of discerning now which of the colleges will comply with the conditions specified after 1890. Finally, is the Illinois State Board of Health an executive body charged with certain clerical and important duties; or is it also a legislative body with full power to enact all such laws as it may deem necessary to regulate the education and practice of the medical profession of the State, altering and amending, elevating or debasing the same, from year to year according to its own pleasure? Let no one infer that the foregoing questions have been prompted by any opposition to a period of four years of medical study and three annual college courses of lectures, of not less than six months each, when the same shall be embodied in a carefully prepared law containing such additional provisions as are necessary for its efficient execution, and enacted by the acknowledged legislative authority of the State. But we are getting a little weary in witnessing more quack medical legistion than we have quack medical practice.

INTERNATIONAL MEDICAL CONGRESS RAILROAD RATES.

The rate upon all railroads, for those designing to attend the Congress to be held at Washington in September next, has been made at one and one-third fare for the round trip, tickets to be issued on the certificate plan. We ascertain from the passenger department of the Baltimore & Ohio R. R. Co., that no pains will be spared by this Company to afford all the comforts in their power to promote and enhance the pleasure of visitors to the Congress, and that the railroad rate from Chicago to Washington and return will be $23.35.

The above announcement of the general reduc-

tion of railroad rates for all those intending to attend the International Medical Congress, to convene on the 5th of September next in Washington, D.C., indicates that the preliminary arrangements are nearing completion. Several months since liberal rates of reduction were announced for nearly all the important transatlantic steamship lines, and many on the other side have already engaged their berths for the voyage. The reduction of hotel rates in Washington, the engagement of suitable rooms for the Congress and its many Sections, were announced soon after. At the recent meeting of the Executive Committee a speedy completion of the programme of scientific and practical work was provided for, and the Committee of Arrangements at Washington have planned a liberal and appropriate series of entertainments, embracing an excursion to Mt. Vernon, a grand banquet, and a more grand excursion for the guests from other countries, from Washington to Niagara Falls and return to the sea-board. Only one thing more is necessary to relieve the hard working Committee of Arrangements at Washington from anxiety, and that is to have three or four more State Medical Societies in rich and populous States, like Ohio and Indiana, follow the example of Pennsylvania, Illinois, and Michigan, and send to the Treasurer of the Congress, $1000, $750, or $500 each, and as many of the Societies in the larger cities follow the example of St. Louis and Pittsburgh, or Alleghany Co., by sending $200, or $250, each, and thus make the entertainment fund good. But individuals who have plenty need not wait for societies to do all, but should send their contributions at once. It is important that all money, either from societies or by individuals should be forwarded as early as possible to the Treasurer, Dr. E. S. F. Arnold, Newport, Rhode Island.

ADDRESSES FOR THE NEXT ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

We learn from the Chairman of the special Committee, that Professor J. L. Cabell, of Va., who was selected to deliver the Address on State Medicine at the meeting of the Association to be held in Cincinnati, May, 1888, has been constrained to decline on account of poor health, which will be very generally regretted. The Committee have, however, been very fortunate in securing the services of H. P. Walcott, M.D., of Mass., in the place of Professor Cabell. Dr. Walcott has been long and efficiently connected with health matters in Massachusetts and is an Ex-President of the American Public Health Association, and an address by him will be listened to with more than ordinary interest. Dr. E. M. Moore, of Rochester, N. Y., has accepted the appointment to deliver the Address on Surgery at the meeting to be held in Cincinnati. Dr. R. Beverly Cole, of California, who was selected to give the Address on General Medicine, has not yet made any reply to the invitation extended by the Committee.

THE ILLINOIS LAW AND INDIAN DOCTORS.—The amended Practice Act which enables the State Board of Health to deal with itinerant "doctors," "Indian doctors," and the like, seems to be driving some of them from this State. The newspapers this week show that a good many of them are in serious trouble in adjoining States.

CHOLERA IN SICILY.—A cablegram of July 12, says that cholera, which is broken out in Sicily, is increasing. There have been 200 cases at Catania, with 140 deaths. The Neapolitans are alarmed on account of the arrival in their city of numbers of fugitives from Sicily.

SOCIETY PROCEEDINGS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, May 2, 1887.

THE PRESIDENT, W. T. BELFIELD, M.D., IN THE CHAIR.

(*Concluded from page 59.*)

DR. C. T. PARKES exhibited some

URETHRAL AND VESICAL CALCULUS.

This is a urinary calculus removed from the urethra, and with this history: The man says he has had trouble for six years in urination, that he has been treated a good many times for retention of urine, that he suffered great pain and distress in urination during that time. Three weeks ago he was brought to my house for the purpose of relieving him of acute retention; he had not passed urine for six or eight hours, and was in great distress. Supposing I had a case of tight stricture to deal with, I attempted to pass a very fine whalebone bougie. I passed it down the urethra and found that it struck against and was stopped by something that seemed rough. I then attempted to pass in a metallic sound, trying different sizes, but found it impossible to strike this body with any sound; the only instrument I could get in contact with it was a whalebone bougie. Then I introduced my finger into the perineum and immediately it came upon the foreign body bulging directly into the perineum before the finger entered fairly into the anus, apparently lying in a horizontal posi-

tion, and so evidently in the membranous portion of the urethra. I advised immediate operation, as I could not get any instrument into contact with the foreign body. It was a new idea with the patient that he had a foreign body in this place, and he wanted to consult with his wife; he went away and two weeks subsequently he came to me for operation. Upon examining the patient this body was now found just below the pubes. I again made attempts to come into contact with the body through the urethra, supposing I might be able to withdraw it from the urethra with the forceps, but by no effort could I bring any of my instruments in contact with it. During the first examination I made efforts by means of my finger and thumb to force this body back into the bladder, but failed to do it, before advising operation. After placing him under an anæsthetic I made a direct incision and exposed the stone, which I had no difficulty in turning out. It is very hard and shaped so as to most easily follow along in the course of the urethra. The urethra in front of it was contracted down to an extreme degree. The man is well. For four days he passed water through the wound in the perineum, but in less than a week he passed it through the urethra.

In another case I was summoned to see a man whom I found suffering great agony in the desire to pass water. The history was that he was taken with this trouble in the woods in Alabama, where he was hunting for timber, and he came to Chicago to be relieved of his trouble. Upon examination I found half way down the penal portion of the urethra a foreign body. I attempted to withdraw it with the forceps, but the loss of blood was severe, so I adopted this plan: without an anæsthetic, and without any assistance, I displaced the elastic integument of the viscus to one side and fixed the foreign body, and then made an incision directly on to the stone and let it out. The opening in the urethra was covered by the opening in the skin, and the man had no trouble except a slight amount of pain for a few days. The stone was about the size of the end of the finger, and was very irregular.

Three or four years ago Dr. Moore sent to me a man about sixteen years of age, with a note saying this young man had a needle in his bladder. The young man denied it, and said he had only a great deal of trouble in passing water. When the sound got into the membranous portion of the urethra it struck the foreign body. I made a good many attempts to remove it by means of forceps; I could seize the body with small forceps and withdraw it a short distance, but failed to get it any further. I followed the young man to his home and calling on Dr. Moore to administer an anæsthetic, I removed it without any difficulty by direct incision. I will say that in examining the case the needle could be felt projecting into the bladder, and probably the anterior portion of it into the membranous portion of the urethra. It is a large sized darning needle, as can be seen. The patient never passed any water through the opening of the wound; the urine was extruded from the urethra the very first day.

The vesical calculi which I have to show you embrace two stones that were removed from the bladder of a young man 18 or 20 years of age. You can see that they fit together, and have rubbed each other smooth. The young man had something of this history: I saw him when he was 14 or 15 years of age; three years before he had received an injury by a fall from a building, when he struck upon the perineum and produced a traumatic rupture of the urethra, which finally recovered, and was followed by a cicatricial stricture, for which he submitted to an operation to by Dr. Bogue, at that time. Some five or six years after that he came under my charge with a return of the traumatic stricture. They are difficult to overcome and are apt to return. It was so tight that the smallest instrument could not be passed through it, so perineal section was determined upon. Up to this time no examination had been made of the bladder; after the division of the stricture in the perineum and the entrance into the membranous portion was made, followed by the introduction of a small probe into the bladder, these stones were found and these two large calculi were removed from the median incision. The incision was not increased laterally in any way; they had become partly prostatic in character and had dilated this portion of the urethra to such an extent that the median incision was all that was necessary.

I show another case of calculi which is important. When I exposed it in the bladder it was in the condition you see it now, and it raises the question whether a stone is ever fractured in the bladder. This was taken from a man 67 years of age, by the lateral operation. It was found fractured into these two pieces. The man did not have any difficulty in his recovery, notwithstanding his age. He passed water through the perineum for only three days. Here is another stone. If you look at one surface you will see that it is covered with blood. When I made the examination it was impossible for me to find this stone except by passing the sound in one certain direction, and it immediately made the impression on my mind that the stone was fixed in its position. I did a lateral operation and upon entering the bladder I found that only the upper part of the stone was exposed; the lower half was imbedded in the mucous membrane of the bladder. By a considerable effort with one blade of the forceps I finally detached it from its bed. This man was 24 or 25 years of age. His wound was healed in nine days, and he was out on horse-back the second week after the operation. It may be interesting to show you a specimen which illustrates the fact that the bladder may contain a stone of considerable size and for a long time without any symptoms whatever. This was obtained under the following circumstances: During my study of topographical anatomy, where I made a good many sections of the frozen bladder, I selected one patient who was not emaciated, where the whole surface shows evidence of good health. He died of pneumonia. I had his body frozen and made sections for other purposes. In making a longitudinal section through the perineum I found a stone in his bladder. It was of considerable size, as you see, but no symptoms in this patient indicated

the possible presence of a stone in the bladder. It is as large as a turkey's egg, and is now in exactly the position occupied when the section was made.

DR. EPHRAIM INGALS once had a case calculus in the urethra that may be of interest in its relation to this subject, as presented by Dr. Parkes. A healthy man of about 25 years came to me, being unable to void his urine. On examining him I found the bladder distended nearly to the umbilicus, and he was in great pain. On attempting to introduce a catheter the instrument was arrested about one inch before it reached the membranous portion of the urethra. As I do not practice surgery, I sought at once to place my patient in charge of one who made this branch a specialty. I went with him to the office of Dr. Moses Gunn, who introduced a metallic catheter of medium size by the stone into the bladder, and the water was all drawn off. Considerable force was necessary to carry the instrument by the stone, and some blood followed the operation. This was near evening. The next morning I visited my patient, hoping to be able to remove the stone with forceps, but found that during the night the stone had been expelled. It was about one half an inch long by one-fourth of an inch in diameter, of irregular contour, and rough on the surface. In three days the patient died from pyæmia. No post-mortem examination was made, but I presumed that the urethra was wounded at the point where the catheter passed the stone. The practical question this suggests is: would it not have been better to have removed the stone by cutting down upon it, as was the practice of Dr. Parkes in the case he has reported?

DR. HENRY J. REYNOLDS exhibited a stone passed involuntarily from the bladder of a woman, or rather without surgical interference, through the urethra. It was an extremely large stone to pass through even the female urethra, and would of course have been an impossibility in the male. The history in brief is as follows: In July, 1885, I was called to see the lady, aged 16, small and delicate. She had been troubled with frequent urination for two years, which ultimately became so bad that she was obliged to quit work. The symptoms gradually became more and more aggravated until two months afterwards, when they finally culminated in the passage of this stone, with much straining and pain. It is 1⅞ inches long, 1¼ inches broad, and weighs 405 grs. There was no vesico-vaginal opening or fistula, but the meatus was very much lacerated and would admit the index finger readily into the bladder two weeks after the passage of the stone. The bladder was examined for other calculi but none were found. The urine dribbled away involuntarily for several months; finally the patient became able to retain part of it, and she is now able to retain all the urine and has become quite healthy. This report may be verified by Dr. E. L. McAuliffe, of Chicago, who also examined the case.

DR. PARKES said, in answer to Dr. Ingals' question, that he would certainly make a direct incision in every case in which there was any difficulty in removing the stone from the urethra.

DR. WM. T. BELFIELD reported a case of

TRANSPLANTATION OF AN UNDESCENDED TESTICLE.

The patient was a healthy youth 20 years of age; in his thirteenth year a small lump appeared in the right groin; during several years thereafter it increased in size, and frequently occasioned severe pain, especially during active movement. Two physicians, consulted during this period, pronounced the swelling a hernia, and advised trusses; but these failed to relieve the symptoms, the patient being frequently unable to work or walk for several hours.

The tumor was found, on examination, to be a fairly-developed testicle, lying upon the middle of Poupart's ligament, just exterior to the external inguinal ring; no hernia. The right side of scrotum was undeveloped. The coverings of the testicle were exposed, the organ and its cord loosened by dissection, and the testicle was pushed down into the scrotum and stitched to the bottom thereof. Dressings were so applied as to prevent retraction by the short cord. The stitches, however, pulled out. After healing the testicle was found, freely movable in its tunic, at the upper portion of the scrotum, just below the pubic arch. The patient attends to his duties with perfect freedom from pain and discomfort. This appears to have been one of those unusual cases in which a testicle, retained in the inguinal canal until puberty, resumes at that period interrupted descent. Such tumors may easily be mistaken—as was this one—for hernia.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, April 7, 1887.

THE PRESIDENT, THOMAS M. DRYSDALE, M.D., IN THE CHAIR.

(*Concluded from page 652, Vol. VIII.*)

DR. W. H. PARRISH reported a case of

LARGE OVARIAN CYST CURED BY EVACUATION, DRAINAGE AND OBLITERATION OF ITS CAVITY.

On January 27, 1887, I operated on a Jewess, 27 years of age, for the removal of a large abdominal cyst. I saw patient the first time on Jan. 24. She was then under care of Dr. N. Hickman, who placed her under my care for operation. She was the mother of four children, the youngest only four months of age. In her last labor she had been attended by a midwife and but little reliable information could be obtained with reference to the existence of an abdominal tumor during the three weeks following labor. The patient stated however, that her abdomen was not unusually large after the birth of the child. About three weeks after labor she was under the care of Dr. Hickman for a few days, during which time she presented the usual symptoms of general peritonitis. She then passed into the hands of others and was not seen again by Dr. Hickman until just before I operated. During this period of three months she was visited by a number of medical gentlemen. Aspiration was resorted to by one of the number. Laparotomy was repeatedly urged but persistently refused by the pa-

tient. The abdomen increased rapidly in size. Pain became constant; appetite entirely disappeared, vomiting occurred at very short intervals. Hectic became marked with occasional rigors, and emaciation had reached an extreme point. The lower extremities were but slightly edematous and there was no special enlargement of the superficial abdominal veins. The abdomen was greatly distended, tense and tender, and the patient was so exhausted that she could not rise from the semi-recumbent position. She was at once transferred from her surroundings of filth and poverty to a private hospital, and I operated without delay as it was apparent that without surgical relief her life could last but a few days longer. There were present Drs. Hickman, R. P. Harris, S. D. Lazarus, John Hand and F. A. Packard. The patient had a general sponge bath with soap and water and stimulants had been administered. Before etherization the pulse was 130 per minute. There was a dull percussion note over the entire abdomen anteriorly and the diaphragm was pushed well upwards by the tumor. Fluctuation was distinct though palpation suggested a thick walled cyst rendered very tense by reason of the degree of distension. I gave a diagnosis of ovarian tumor with suppurating contents and extensive adhesions. Incision 2½ inches long in median line; without opening the peritoneal cavity the knife cut into the cyst wall which was easily recognized by its consistence, color and anatomical elements. There were anterior adhesions of great extent and firmness. The cyst was opened and a quantity of pus-like fluid of offensive odor escaped. The cyst did not empty itself and the introduction of two fingers showed large masses of lymph-like character varying in density and size. The introduction of the hand was required to remove these masses. In the interior were a number of thin septa such as are seen in colloid ovarian tumors. The great bulk of the contents was an apparent mixture of pus, lymph and detritus, while part of the contents presented the translucent appearance of the fluid of some ovarian tumors. After thoroughly emptying the tumor it was evident that its walls were everywhere adherent. No portion of the wall could be brought into the abdominal incision. There were evidently dense adhesions to the liver, spleen, stomach, intestines and to the pelvic brim and contents. The tumor did not dip down into the pelvis; the walls were everywhere thick and strong, At this stage of the operation the patient's condition seemed threatening imminent death, pulse 140 and exceedingly feeble. The ether was withdrawn and was not used again, stimulants were given hypodermically. The thickness of the cyst walls and the universal adhesions rendered the case one well adapted to treatment by drainage. I decided not to remove the cyst. I now thoroughly cleaned its interior, introduced a glass drainage tube and approximated around it the walls of the abdomen and cyst, carrying the sutures into the cyst wall but not through it.

The patient rallied well, and there was no ether vomiting. For several days the discharge through the tube was of a purulent fluid similar to portions of that removed during the operation, its character then changed to that of ordinary pus. The cavity of the cyst was daily emptied of about two ounce of fluid, and phenol-sodique injected in the same quantity. The abdomen was covered with a compress and binder to keep the inner cyst walls approximated, and to encourage absorption of the exuded lymph. The area of dulness diminished rapidly from day to day and the discharge diminished with surprising rapidity. At the end of two weeks a shorter drainage tube was substituted and at the end of three weeks rubber tubing about three inches in length was introduced in lieu of the glass tube. The wound was entirely healed by the end of the fourth week. Examination showed a small, flattened mass, two by one inches, underlying the abdominal wall and adherent to it. The patient's appetite became ravenous a few days after the operation, and she was fed liberally. The recovery of the patient is now complete, and I feel confident the cyst cavity is so effectually obliterated that it cannot refill. Does the rapidity of the shrinkage and disappearance of the cyst indicate that it wat not an ovarian tumor? I answer in the negative. It was not an extra- nor an intra-peritoneal abscess, for abscesses do not contain such septa nor such fluid. The character of the contents and septa distinguish this case from two cases operated on by Tait, in which he ascribed the tumors to distension and suppuration of sacculated urachus. In making the incision I recognized the peritoneum external to the cyst. In my own mind there is no doubt as to the ovarian origin of the tumor. A specimen of the tumor was examined microscopically by Dr. F. A. Packard who has written as follows: "I found it to be composed of numerous fatty degenerated epithelial cells, leucocytes and granular material entangled in a dense meshwork of fine homogenous fibrin-like fibres. There appeared to be no definite arrangement or other evidence of an organized tissue. The general appearance was that of a tissue that had undergone complete fatty degeneration. I, unfortunately, ruptured the small cyst, before I could collect the contents for examination." The paper will be published in full in the *American Journal of Obstetrics.*

Dr. R. P. Harris remarked that the cyst contents chiefly of a thin greenish fluid of a puriform character in which were found masses of cell structure, some of them as large as a fist, on the surface of which were in some instances still to be seen, small translucent cysts containing a yellowish fluid, there was also noticed during the emptying process an escape of fluid from cells which had preserved their integrity, and which resembled to the eye what is often seen in tapping during ovariotomy of multilocular tumors. My own impression during the operation was that the tumor was ovarian. The emaciated state of the woman, her rapid pulse, and the strong adhesions of the cyst wall to the abdominal parieties and viscera, satisfied me that any attempt to remove the cyst would cause the patient either to die upon the table, or of shock in a few hours. Judging from the recoveries after the secondary operation in abdominal pregnancies where it has been found of vital importance not to remove the cyst, a measure the value of

which was discovered by an accident more than ninety years ago in New York city, which occasioned its being left *in situ* and eventuated in saving the woman's life, it was decided to adopt the same plan here. When the abdominal wound was closed in Dr. Parrish's case, the thick cyst wall could be felt like a large disk with edges more than half an inch thick. As the disintegrating process thinned the cyst walls contraction of the disk took place and the centre of the abdomen became deeply fissured, until the diameter of the disk was not more than three inches; and it was also much thinner; this change continued until the percussion sound showed no dense structure beneath the abdominal wall. As the ovarian tumor was so altered in structure by peritonitis, that its lining surface could no longer secrete ovarian fluid, there was no risk of the formation of a discharging fistula, and the wound rapidly closed as the sac contracted.

DR. B. F. BAER thought Dr. Parrish acted wisely in not attempting to remove the source from which the fluid was secreted. He was led to express this opinion, first and mainly because the doctor was not sure at the time of operation that there was a tumor, and secondly of its very close adhesion, if a tumor existed. He questioned the ovarian origin of the fluid in this case upon the following conditions as stated by the author: 1st. The difficulty of diagnosis before operation. 2nd. The character of the fluid; absence of the ovarian cell especially. 3rd. The fact that the secretion so readily ceased after the sac had been opened. 4th. Because there was such a rapid disappearance of the cyst wall. It is so well known to all of us that the secreting surface of a true ovarian tumor is not destroyed by tapping or drainage that we have come to regard tapping and even drainage as very bad practice where the tumor can be removed, even at considerable risk; free drainage and injecting the tumor were long ago given up as futile in the cure of ovarian tumors. Then the sac of an ovarian tumor does not soon undergo atrophy and absorption even if the secreting surface is destroyed. The cases of extra-uterine pregnancy mentioned by Dr. Harris, in which the sac disappeared so readily, were doubtless of the abdominal variety, and the gestation sac therefore largely, if not entirely, adventitious. This was probably the character of the sac in a case upon which he (Dr. Baer) operated some time ago, and removed a full term child which had been dead thirteen months. The fetus only was removed. A drainage tube was placed in the sac. The patient recovered and all remains of the fetal envelope have disappeared. Dr. Baer would admit, however, that the fluid in the case reported to-night was very like ovarian except in the absence of the ovarian cell, which he regarded as of very great diagnostic value in a doubtful case. He requested the President to express his opinion concerning the absence of the cell in this case.

DR. DRYSDALE thought it would be very difficult to detect the ovarian cell in such a mass of purulent matter; but, if the fluid of the child cysts had been examined, the cell would most probably have been found. He dwelt upon the importance of the investigation of the fluid being made by one familiar with the appearance of the ovarian cells and those resembling them, as without such experience it was difficult to differentiate the cells. Dr. Drysdale referred to an obstetric case which Dr. Parrish had attended for him four years ago. This lady suffered from a tumor some years before, which proved to be a dermoid cyst developed in the posterior wall of the uterus. During its growth it formed a communication with the bowel and a great quantity of offensive fluid escaped in this way. The opening into the bowel closed, the sac filled again, the patient emaciated rapidly and septicæmia set in. Aspiration was resorted to and a quantity of very offensive matter removed, after which the cyst was washed out with a five per cent. solution of carbolic acid; this was repeated nine times at intervals, the patient declining any other operation. She had now become so emaciated that every process of bone showed through the skin and her pallor was extreme. In this condition, with a pulse of 140 and a temperature of 105°, she finally submitted to an operation. Before this was commenced she was told that it was not likely that the tumor could be removed, as from its location in the uterine wall and its former communication with the bowel it would probably be found firmly adherent to the surrounding parts. He therefore proposed opening the abdomen, and if the tumor was found as he apprehended, he would stitch the edges of the cyst to the lips of the abdominal incision, insert a large drainage tube and close the wound. This was done, and although the case was so unpromising, she made a good recovery, while the cyst gradually contracted and finally disappeared, but there still remains a fistulous tract, where the tube was inserted, which occasionally discharges matter. She became pregnant about three years after the operation and was delivered of a male child by Dr. Parish, who informed him that she had an easy labor.

DR. JOS. PRICE had no doubt of Dr. Parish's case being an ovarian cyst. He had seen the patient and had recommended operation.

DR. PARISH said that the walls of the cyst were largely composed of adventitious material, the result of inflammatory processes breaking up the original substance, and hence in part the explanation of the rapid recovery of the case.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, April 31, 1887.

H. AUGUSTUS WILSON, M.D., IN THE CHAIR.

DR. H. M. FUSSELL read a paper on

DIAGNOSTIC VALUE OF TUBERCLE BACILLI IN SPUTA.

His observations enabled him to reaffirm that the presence of tubercle bacilli in sputa is diagnostic proof of the presence of tuberculous phthisis. In the examination of cases he used a modification of Gibbe's method suggested by Professor Wm. Osler. The sputum was spread as thinly as possible on a clean cover glass, allowed to dry in the air, and

passed quickly two or three times through the flame of a spirit lamp. The cover-glass was then immersed in solution of magenta, manufactured by Beck & Co., and allowed to remain fifteen minutes after first slightly heating. It was then decolorized in alcohol, acidified with hydrochloric acid (four or five drops to a watchglassful of alcohol), and examined under a moderately high power. In this manner the whole proceeding can be done in less than half an hour. If bacilli were not found by the rapid method, however, the glasses were allowed to remain in magenta over night, and then examined as before. The power used at first was Hartnack No. 9 immersion, afterwards 7 objective, 4 eyepiece. Lower power may be used, however, by one perfectly familiar with the bacillus. He has used a Zentmeyer one-fifth with A eyepiece. The sputa from 100 cases of lung disease were examined. For convenience we may divide these into two classes: Class I contains eighty-four cases. The sputa of all of these cases contained tubercle bacilli. Class II contains sixteen cases. Tubercle bacilli were *not* found in sputa from any of these cases.

Each of the above classes may be subdivided: Class I. Subdivision A contains seventy-nine cases in which there were evident physical signs of phthisis. Subdivision B contains five cases in which there were few or no physical signs of phthisis. The diagnosis was made by the presence of bacilli in the sputa. Class II. Subdivision C contains eight cases in which phthisis was *not* suspected from the physical signs, and no bacilli were found. Subdivision D contains eight cases in which the physical signs led to a suspicion of phthisis, but the absence of tubercle bacilli and the subsequent history proved it to be absent. It is in such cases as those of subdivisions B and D that the presence or absence of tubercle bacilli in the sputa is of such practical value. Of the seventy-nine cases belonging to subdivision A there could have been no reasonable doubt of the existence of phthisis basing the opinion on the physical signs present. Tubercle bacilli were found in each case. Subdivision C contained eight cases, two of chronic pleurisy and six of chronic or subacute bronchitis. The sputa from each case were repeatedly examined and no bacilli were ever found.

Dr. W. Osler thought that the importance of the tubercle bacillus in the sputum as a means of diagnosis is not sufficiently recognized by the profession. The technical skill required is not very great, and the time required with the rapid methods of staining is not more than fifteen to thirty minutes. He has succeeded in demonstrating the bacillus within five minutes of the time that the sputum was put upon the slide. This examination is particularly serviceable in just those cases where the evidences of diseases are very slight. Only within the past few weeks there was in the University Hospital a man without the pulmonary signs, who had been failing in health and had slight fever. The condition was attributed to some obscure abdominal disease. Finally a suspicion arose that there might be some trouble with the lung, and the sputa were examined and the bacilli found. The signs of phthisis have since developed. The power required for these examinations need not be, as Dr. Fussell says, very high.

Dr. Frank Woodbury reported a case of

LAPAROTOMY FOR PERITYPHLITIC ABSCESS.

The specimens were the vermiform appendix, perforated by an ulcer, and a piece of omentum infiltrated with lymph. These tissues were found in the interior of an abscess, and in this abscess was found a concretion, probably fæcal, something larger than a cherry-stone.

On April 20, a gentlemen, æt. 26, called at my office, complaining of pain in the muscles in different parts of the body, but more especially of malaise; he stated, also, that he passed large quantities of limpid, clear urine. After examination I concluded that he was in all probability suffering with congestion of the liver and kidney as a result of exposure to cold. The urine contained one-fifth albumen, a number of leucocytes and epithelial cells, and one hyaline cast slightly granular. He was ordered calomel in fractional doses to be followed by a saline laxative. This caused an evacuation of the bowels and an improvement in general appearance, and on the next day, he looked and felt better. On account of the irritation of the kidney, I gave him a mixture containing bicarbonate of sodium. He returned on April 22 during my absence. I found him in the water-closet, and he stated that he could stay there all day, as he had been passing water almost every five minutes. He was greatly prostrated. I gave him a little morphia, and he took a sleep in the office and returned home. On Sunday he had a bad night. He now complained of severe pain in the right inguinal region, and a lump was for the first time observed in the abdomen, to the right side, about two inches above the middle of Poupart's ligament. The bowels had not been moved since Friday. I then ordered a few more calomel powders with copious drinks of hot water, which produced several copious evacuations. Sunday afternoon the temperature was 103.5°. On Monday the lump was decidedly larger and potato-shaped, suggesting intussusception. At my suggestion Dr. James C. Wilson saw the case in consultation, and we came to the conclusion that there was probably intussusception, although there had been no decided obstruction and no discharge of blood; nor had there been any vomiting. In order to relieve the pain, eight Swedish leeches were applied over the tumor, and during the night morphine was given He was somewhat better yesterday. This morning when I saw him his condition was bad. His tongue was dry and brown, and his pulse was weak and rapid. At 2 o'clock Drs. T. G. Morton, J. C. Wilson, Rhodes, and I performed laparotomy, making an incision about ten inches long. The superficial tissues were infiltrated with pus, which welled out when the transversalis fascia was cut. Going through the peritoneum, an abscess was found, and fishing out the cæcum and vermiform appendix, we found the large perforation seen in the specimen. A silk ligature was applied near the origin of the enlarged

appendix, and also near its extremity, and the sight of the ulceration and the intervening portion removed. The operation was done with all antiseptic precautions and a drainage tube was inserted into the bottom of the abscess. The temperature of the patient is nearly a degree lower (98.6°) this evening than it was this morning.

Early in the illness a large quantity of urine was passed. On Sunday, and again on yesterday, he passed a small quantity of blood in his urine. Probably the abscess was pointing into the bladder. The position of the tumor was unusual. The protrusion was almost in the median line. It is this that made us hesitate about adopting the diagnosis of perityphlitic abscess. I learned to day that the patient had been subject to occasional attacks of cramps in the stomach for a year or two, but these were not referred especially to the right side.

On making the section, pus was found in the muscles; and when the peritoneum was reached, it was found thickened, and pus was also under it. As a result of the inflammatory process, the abscess had been shut off from the general peritoneal cavity. The posterior layer of peritoneum had probably been destroyed by the abscess. A solution of bichloride of mercury (1:2000) was used to douche the wound until the peritoneum was opened, when hot water was substituted. The walls of the abscess cavity were scraped with the curette, and all sloughy tissues removed. The wound was closed with deep and superficial catgut sutures, and iodoform applied upon the antiseptic gauze.

DR. EDWARD JACKSON reported a case of

SYMPATHETIC OPHTHALMITIS, WITH KERATITIS; RECOVERY, AFTER EXCISION OF THE EXCITING EYE.

Sympathetic ophthalmia, like small-pox, is now more rare than formerly, because we have for it a reliable prophylactic. That cases still occur is due to the fact that prophylaxis is sometimes neglected; and the continued diminution of their number depends, as with small-pox, upon keeping alive a just appreciation of the serious character of the disease, and the necessity for prophylactic measures.

George M., æt 39, a carpenter came to me for inflammation of the left eye, which had commenced two weeks earlier, the eye having before that been perfectly well. It presented a moderate conjunctivitis, the cornea was slightly hazy throughout, and there was a superficial ulcer near its lower margin and another near the upper outer border. There was a marked pericorneal zone, broadest opposite the ulcers. The iris seemed normal, the pupil was 5 mm. in diameter, circular and immovable (he had been using atropia), and subsequent trials showed that 5 mm. was the widest dilatation of his pupil that atropia or similar mydriatics would produce. The media back of the cornea were normal. The optic disk was *very decidedly* reddened, but not swollen nor indistinct of outline; the fundus otherwise normal. The patient and Dr. Hoskins agreed that the eye looked decidedly better than it had a few days before. The right eye presented an adherent leucoma near the outer margin of the cornea, which was otherwise clear. The pupil was distorted and closed by a dense white membrane, which, toward the inner side, fell back a little from the margin of the iris, indicating that the lens was absent from its normal position. The tension of the globe was below the normal. Good central light perception, but with the field narrowed in all directions, especially upward. Six years before, the eye had been struck by a fragment of steel flying from the edge of a cold chisel. This was followed by severe inflammation, which subsided in a few weeks, and *the eye had never been at all sore since.* It was now free from undue tenderness or other symptom of inflammation. The treatment ordered was applications of a 1 to 120 solution of silver nitrate to the palpebral conjunctiva, and continuance of the atropia, with dark glasses. Two days later the eye became decidedly worse. He was confined to a dark room, atropia solution 1 to 60 was instilled every two hours, a saline cathartic was given, and he was put on the use of mercuric chloride and potassium iodide. At the end of a week there was general hyperæmia of the eyeball. The mass of the cornea was clearer, but there was slight keratitis punctata and distinct vitreous opacities; vision $\frac{12}{cc}$; great pain and photophobia. I enucleated the right eye, finding it free from evidences of recent inflammation, but presenting in the ciliary region, below, a mass of lymph the size of a split pea, in which was imbedded a splinter of steel 3 mm. long, and weighing between 2 and 3 grains. The socket healed normally. At the close of the operation, and still five hours later, the left eye was decidedly paler than before the right was excised. The only change in treatment was the application of a blister to the left temple, and the use of a drop of a 4 per cent. solution of cocaine with each instillation of the atropia solution. Next day the eye was worse, but after that it improved, and the patient is now thirteen months after the enucleation, working at his trade.

Was this ophthalmitis due to the injury of the other eye, which for six years had given no evidence of active disease? In this case their was neither history, symptoms, nor collateral evidence to indicate syphilis or rheumatism. It presented hyperæmia of the disk, serous iritis, keratitis punctata, vitreous opacities, plastic iritis, and repeated relapses. What other symptom save the one under discussion could have helped to make the diagnosis more certain? Among the 211 cases collated in the report on sympathetic ophthalmitis made by its committee to the Ophthalmological Society of the United Kingdom. in March of last year, twenty-three cases of this kind are included. In four cases the intervals were eighteen, fourteen, ten, and eight years. The committee say: "Though the series is small, we may safely conclude from it that sympathetic ophthalmitis occurring after a long interval, and without any fresh inflammation of the exciter, is by no means likely to be mild." It may be questioned if the corneal ulcer and conjunctivitis had any necessary connection with the sympathetic disease. Yet in three of the

cases which form the basis of the report mentioned corneal ulcer was noted and in one conjunctivitis. Dr. D. Webster has reported as sympathetic a case of catarrhal conjunctivitis which had occurred in the service of Dr. C. R. Agnew, and states that Dr. H. D. Noyes had presented a case of sympathetic con junctivitis to the New York Ophthalmological Society.

The above points bear upon the diagnosis of sym pathetic ophthalmitis. Of equal importance are certain questions of treatment. Atropia, I think, saved this eye from the baneful effects of posterior synechiæ. The use of tonics was symptomatic. Mercury was given internally on the strength of tradition; improvement occurred under its use; the relapse, running into plastic iritis, happened some days after its administration had been suspended. Its local use caused no notable irritation, and was followed by rapid healing of the corneal ulcer. But the most important point in regard to treatment is the question of removal of the exciting eye. Here removal was followed by recovery. In other cases recovery has occurred without removal. Or, again, as in a case reported some years ago, by Dr. A. D. Hall, removal has been followed by very great permanent damage or complete loss. Referring again to the report above quoted, we find that of its cases the exciter was removed early in 64, of which 8 were lost; and it was removed very late or not at all in 65. of which twenty-six were lost. From their investigations that committee draws the very moderate conclusion, "that whether early removal of the exciting eye be positively useful in staying the dis ease or no, it is certainly not injurious, as no less an authority than Mauthner has asserted that it is when the sympathetic disease is of the 'serous' form."

Dr. G. Betton Massey presented

A RHEOSTAT, FOR THE UTILIZATION OF INCANDESCENT LIGHTING CURRENTS IN MEDICAL PRACTICE.

The new building of the Orthopædic Hospital having been recently furnished with an incandescent lighting plant for which wires were laid throughout the edifice, he determined to make use of the same current in the treatment of patients in different parts of the house in place of that derived from ordinary galvanic batteries. To do this, it was necessary to use the current as it was delivered to the lamps in full strength from the entire secondary battery, as the many wires necessary to the use of a cell selector were out of the question. The electromotive force of this current is only sixty volts, which is about equal to the full strength of an ordinary gravity battery of sixty cells or of a Grenet battery of forty-five cells. He had, therefore, merely to choose a rheostat or resistance medium that would be efficient with the full strength of any good chemical battery. The wire rheostat was rejected for the double reason that it was expensive, and did not admit of delicate gradations; and the water tube, because it would have to be long to be efficient, and with the rod pulled up would be awkward in use.

The rheostat exhibited, consists merely of a broad line of pencil mark on roughened glass extending around the greater part of a circle.[1] One end of this broken circle of pencil mark is connected with a terminal of the battery, and the circuit is completed by a circular switch which makes contact with the pencil mark by means of a small metallic wheel. A greater or less length of plumbago is thus included in the circuit with ease, and this material thinly spread out being a poor conductor, a great range of resistances is obtained. In connection with the rheostat a milliampèremeter must always be used, the hand being on the rheostat and the eye on the meter. With this rheostat and a meter attached to a battery all cell selectors may be dispensed with, and the whole battery used simultaneously and evenly. The instrument was made by Mr. Flemming, and is mounted with the meter on a ward table for use at the bedside. Connection with the mains is made by thrusting a plug attached to the table into receptacles in the base boards near each bed in the wards, and beneath the lamps in the private rooms.

Dr. Massey also exhibited a

CHEAP, PERMANENT GALVANIC BATTERY.

Its chief advantages are: the cheapness of the materials used, its freedom from local action and creeping salts, and the long intervals that it will run without being touched. It consists of a zinc rod, such as is sold for use in the Leclanché cell, clasped by rubber bands to a carbon rod, and resting in a saturated solution of chloride of ammonium and bichromate of potassium in simple water. The carbon rod is one of those used in the arc-light lamps, and, like the zincs, is both plentiful and cheap, one carbon rod broken in half serving for two cells. The containing jar is an ounce quinine bottle. Before attaching the wires to the carbons by winding and twisting, as shown in one cell, or by the pin-and-hole arrangement, as shown in another, the tops of the carbons must be treated with boiling paraffine to prevent interstitial creeping. The elements are kept about half an inch apart by blocks of soft rubber. The permanence of the cell is greatly improved by greasing the inside of the necks of the bottles and covering each with a piece of thin rubber to prevent evaporation. Sixty cells give a strong and reliable battery, and the electro-motive force is estimated at fully a volt per cell. The total cost of the materials is only twelve cents a cell.

FOREIGN CORRESPONDENCE

HEIDELBERG AND WURTZBURG.[2]

Cicatricial Indications of Scientific Attainments; Their Scientific Aspect—Heidelberg Hospital—Carcinoma of Head of Pancreas—Carcinoma of Face—Riedinger's Method of Resecting the Knee—Schoenborn—Removable Plaster Splint—Sarcoma of Base of Skull—Iodoform—Leube and Naunyn.

I left Stuttgart perfectly satisfied with the principal object of my visit, and arrived in the famous

[1] A straight pencil mark rheostat was shown by Dr. Jacobi to the American Neurological Society in 1885.

[2] By permission of Drs. Fenger and Senn.

University town of Heidelberg April 6. I reached Heidelberg at the wrong time, as Easter vacation had commenced and Prof. Czerny had improved this opportunity for obtaining a much-needed rest by a trip to the French metropolis. I was very anxious to meet Czerny, not only to become personally acquainted with him and to see him operate, but also for the purpose of discussing with him certain topics in intestinal surgery which have engaged my attention for some time, and upon which I knew he could impart more information than any other surgeon.

A look at the straggling students that remained during vacation must satisfy even the most superficial observer that the four years prescribed for study are not spent exclusively in the lecture-rooms, hospitals and laboratories, or burning the midnight oil in boarding houses, as, almost without exception, they present a florid, healthy appearance not at all suggestive of hard mental work. Every student wears his mark of honor, from one to twenty-four scars indicative of the number of times he has been marked by his opponent in the defense of a real or imaginary question of honor. As a rule, the left side of the face is disfigured; but when this has been converted into a checker-board incapable of receiving further impressions, it seems it becomes necessary to attack the other side, in order to increase the surface for recording the number of times he had met his man. These scars are a study in themselves. In size they vary from a mere scratch to a complete division of a cheek. You can see recent scars, with an exuberance of granulation tissue and a high degres of vascularization, and the linear depressed scars of old veterans upon the field of honor, which have left the face in all stages of contraction and distortion. Many of the faces, as far as looks are concerned, to the sight of an ordinary individual are maimed for life, but among students a man appears to be appreciated by the number of scars he can show. These passports prove for him at all times and at all places that he has been a student, and as such they possess an intrinsic value. One of the assistants in the hospital had so many marks that for the sake of curiosity I made repeated attempts to count them, but had to abandon the task as insurmountable as the counting of the stars of the firmament.

From a scientific standpoint these scars present also interesting objects of study. It is evident that the duels are not fought in an aseptic atmosphere, or that the wards have not been rendered properly aseptic, as all scars that I have seen seem to prove, from their size and ugliness, that primary union is the exception and not the rule. I have come to the conclusion that the recipient of a wound under such circumstances is not anxious to obtain union by a minimal cicatrix, as such a thing might become invisible and he would have nothing to show externally in after life that he belonged to one of the learned professions. Calculate, if you can, the time that is required to become the possessor of two dozen of scars. Let us imagine that the assistant with countless scars had fifty genuine scars—and I am quite certain that this number is rather below than above the real figure—if he devoted to the acquisition of each wound and the subsequent healing process only one week, he spent one year out of the four prescribed by law in acquiring a scientific face. That such students never wear the blue ribbon is well known, and it is safe to assert that the same individual with so many marks spent at least another year behind his beer-mug. The much-marked men seldom come to the surface in after life. During my travels on the Continent I have scrutinized carefully the faces of prominent surgeons, and while some of them can show one or two, seldom more, decent scars, most of them have preserved the integrity of their facial integument during their student days, and devoted their time to nobler things. It is a disgrace to the German government that the foolish practice of duelling, although forbidden by law, is still tolerated. If no other measure for the total suppression of this relic of the barbarous age can be enforced, I would suggest that double-barrelled shotguns loaded with a handful of buckshot be introduced as weapons, and I can safely predict that duelling in Germany will soon have only a historical interest.

Dr. Bessel-Hagen, Privat docent für Chirurgie, and during Czerny's absence his representative, very kindly showed me through the surgical wards and explained the most interesting cases. The surgical department of the hospital comprises four separate buildings, supplied with all modern improvements, and having a capacity for 200 beds. The operating amphitheatre is a model of its kind, and affords ample room for 200 students. Antiseptic precautions are carried out with scrupulous care. Solutions of corrosive sublimate are used for irrigation; gauze compresses and sublimated wood-wool for dressing wounds. Dressings are not removed for twelve days or more unless positive indications for an earlier dressing arise. That antiseptic surgery is thoroughly practised in this hospital becomes evident from an inspection of the temperature tables, which show no material rise in all the cases which had recently been operated upon; and among them were many serious operations.

A case of primary carcinoma of the head of the pancreas had been subjected to abdominal section for diagnostic purposes, but when the true nature of the lesion became evident by direct palpation, the wound was closed, as the disease had extended to adjacent organs. The most prominent symptom in this case was profuse salivation.

Dr. Steinthal, first assistant, performed a very creditable operation on a woman 60 years of age suffering from a carcinoma of the face, involving the parotid region and external ear. During the dissection it became necessary to extirpate the entire parotid gland. Most of the branches of the facial nerve were dissected out of the gland and left intact. The whole of the external ear was removed. A number of the submaxillary glands which were found slightly enlarged were also removed. The immense defect was covered by two flaps, one from the scalp and another from the side of the neck. At a point corresponding to the external meatus a perforation was made in the flap. Dr. Hetzel, another assistant, made an amputation of the thigh in a boy suffering

from tuberculosis of the knee-joint, and where a previous arthrectomy had been followed by a return of the disease, which involved the articular ends of the bones and surrounding soft parts to such an extent that this alternative furnished the only possible means to meet an *indicatio vitalis*. Antero-posterior cutaneous flaps were made, the end of the bone covered with a periosteal flap, all visible vessels tied before removing the constrictor, and after all hæmorrhage had been arrested, the muscles were sutured separately with catgut and the cutaneous flaps with silk, with the exception of two openings for bone drains. Gauze compress was placed next the wound, and a large wood-wool cushion as a covering for the wound.

From Heidelberg I hastened to Würtzburg, where I was more fortunate in finding the men I wished to meet, Professors Schoenborn and Riedinger, both teachers of surgery in the University. In the evening Prof. Riedinger called at the hotel and invited me to meet him at his private hospital next morning, to witness an excision of the knee-joint after his method.

The patient was a boy about 6 years of age, suffering from tuberculosis of the knee-joint. Evidently the disease was in its earlier stages, as the joint was only moderately swollen and did not present that sense of semi-fluctuation as is the case in advanced fungus inflammation of this joint, at the same time the articular surfaces were not displaced. The operation was performed as follows: The whole limb was thoroughly washed with warm water and soap and subsequently with a 1-1000 solution of sublimate. Esmarch's constrictor was applied about the upper third of the thigh, and a *longitudinal* incision made over the centres of the patella, dividing the tissues with one stroke down to the bone, and passing through the lower portion of the quadriceps and the tendon of the patella. At a corresponding point the patella was sawn through in the same direction so that the divided patella and the soft parts presented two symmetrical halves which when separated exposed the joint fully to inspection, both by sight and touch. Without much difficulty the lateral halves were so widely separated that the lower end of the femur was brought fully into the wound and the articular end was removed with a saw, the line of section being below the epiphyseal cartilage. The tibial end was treated in the same manner. At least two osseous foci were exposed by the bone sections, and each was carefully scraped out with a sharp Volkmann's spoon. This long anterior incision fully exposes the upper recesses of the synovial sac, and renders the extirpation of the entire capsule an easy matter. After the extirpation of the capsule with curved scissors the whole surface was irrigated with a sublimate solution and carefully dried, and the parts restored to their normal relationship, and the two halves of the patella tacked together by applying two catgut sutures passed through the tendinous covering and periosteum, but not through the bone.

The only provision for drainage was a rubber drain introduced into the upper angle of the wound. As the limb is kept in nearly perpendicular position for at least 24 hours, the drain occupies the most dependent position of the wound, and answers all requirements. The remainder of the wound is closed with silk sutures. A copious gauze dressing, embracing nearly the entire limb, is applied, over which a thick layer of absorbent cotton and equable compression by bandaging limb from toes to groin. A posterior hollow splint, with foot-board, serves to immobilize the limb. The constrictor is not removed until the whole dressing is applied. The first dressing is not changed for a week, when the drain is usually found outside of the wound. As the wound at this time is usually firmly united, the sutures are removed and the limb put in a plaster of Paris splint. Anatomically this operation presents a number of advantages. I have always observed after making the transverse incision, that on account of muscular traction of the extensors of the leg, there is not only a tendency for separation of the fragments of the patella, but a constant traction always results in the formation of a wide and often ugly cicatrix in the skin; conditions which are avoided by the anterior longitudinal incision. When the articular ends of the bones are brought fully into such a wound by forcibly flexing the leg upon the thigh, the entire synovial sac is brought into full view and rendered accessible to removal with scissors. The tissues divided in the direction of the axis of the limb, serve a most useful purpose in securing immobilization during the process of repair.

As Professor Reidinger states, this method of operation should always be resorted to in making an exploratory examination of the knee-joint, as in case further operative measures appear superfluous, the parts can be replaced and kept in contact by simple measures, and after the reparative process is complete the joint is anatomically in the same perfect condition as before the operation. Professor Riedinger is firmly convinced of the utility and advantages of this operation over the ordinary method and resorts to it in all cases where arthrectomy or excision is deemed necessary, and is perfectly satisfied with the results obtained in a large number of cases.

Hofrath Professor Schoenborn, well and favorably known as professor of surgery in the University of Königsberg, has only recently succeeded the late lamented Prof. Herman Maas. Prof. Schoenborn is only 47 years of age, and has left a splendid position and one of the best arranged surgical clinics in Germany, for a larger but more difficult field of labor. The Julius Hospital in Würtzburg is an immense institution, with a large material for clinical instruction, but the surgical wards are miserable, and the Government is not disposed to make any changes for the better. The operating room is small and badly supplied with light. If I remind you that Würzburg has 1100 medical students, it is not strange that the new professor of surgery is sadly conscious of the defects of his clinic. At the time I visited Schoenborn I found him happy in the presence of Prof. Naunyn, one of his former colleagues in Königsberg, who had come with his wife to pay his friend a visit.

I was shown all cases of interest in the surgical wards and for the benefit of visitors, a plaster-of-Paris

splint was made, which has been used for such a long time in the Königsberg klinik, in the treatment of fractures, and for immobilizing joints. It is the well-known anterior or posterior splint made of fibres of hemp impregnated with plaster-of-Paris paste, and accurately moulded to the parts until the plaster has set. It makes an excellent removable permanent splint, and certainly is much preferable to the most ingenious and costly ready-made splints. Another specialty of Schoenborn's is the removable water-glass splint, which is much more durable and lighter than circular plaster of Paris splints, and is used extensively in the treatment of spondylitis and inflamed joints.

The same day he removed a sarcomatous tumor from the base of the skull, through the mouth, after first dividing the soft palate. As a preliminary measure the trachea was opened and plugged with a Treudelenberg's canula. After the removal of this tumor the wound in the soft palate was closed with sutures. The trachetomy pipe was allowed to remain 24 hours for fear that the wound secretions from the pharynx might enter the trachea and produce a pneumonia.

Schoenborn is no longer a believer in the antiseptic properties of iodoform, as he has seen the staphylococcus aureus grown luxuriantly upon a culture containing this substance. He attributes to it, however, other valuable properties, which act salutary in the process of wound healing, the most important one being that it keeps the wound dry, and in doing so acts indirectly as an antiseptic.

In the evening I met Professor Leube and Professor Naunyn at Professor Schoenborn's house, where dinner was served, and a variety of wines sampled. German professors, when behind the official curtain, appear to enjoy life as well as the average man outside of the medical profession. If Professor Leube is so liberal in diet with his patients as he was with himself that evening, he would experience some difficulty in emptying their stomachs, even seven hours after mealtime. The old saying, that "preaching is easier than practice," was verified on this occasion, and we left the house of our pleasant host and hostess, feeling at peace with ourselves and the entire outer world, and conscious that we had spent a most interesting and pleasant evening. In my next letter I expect to give you a description of how to cure surgical tuberculosis à la Koenig. N. SENN.

MISCELLANEOUS.

EBERTH'S RODS IN TYPHOID STOOLS.—In the *Vratch*, No. 22, 1887, p. 438, Dr. G. O. Shpolansky, of the Odessa Town Hospital, writes that he and Dr. N. A. Stroganoff, prosector of the same hospital, have examined bacterioscopically stools in 96 cases of enteric fever, with the object of solving the following two questions of paramount practical importance: 1. Whether Eberth's microbes are present in all cases of the disease or not? and 2. Whether the microbes are still present in the stools of convalescent patients? The main outcome of their researches may be summarized thus: The typhoid bacilli were found in 90 of 96 cases. Of those examined, 88 recovered and 8 died. In one of the latter no bacilli could be detected in the stools during life. In one of three convalescent patients examined no bacilli were found after the temperature had finaly returned to the normal range. In the remaining two the microbes were still daily discovered for nine and fifteen days respectively after the defervescence. In view of the facts stated under the first head, a bacterioscopic examination of the stools should be undertaken in every case where any suspicion as to typhoid fever may arise; and in consequence of those adduced under the second, the stools of the patients recovering from enteric fever cannot be considered innocuous for at least fifteen days after the defervescence.—*British Medical Journal*, June 25, 1887.

THE ENGLISH PASTEUR COMMISSION.—The report of the Committee on Hydrophobia has been recently issued. It contains experimental and other evidence which strongly supports the theoretical views of Pasteur and their practical application.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 2, 1887, TO JULY 8, 1887.

Major Wm. S. Tremaine, Surgeon, ordered for examination by Army Retiring Board, at Governor's Island, N. Y. Harbor. S. O. 151, A. G. O., July 1, 1887.

Capt. J. O. Skinner, Asst. Surgeon, granted leave of absence for four months, on surgeon's certificate of disability. S. O. 151, A. G. O., July 1, 1887.

First Lieut. H. S. T. Harris, Asst. Surgeon, will be relieved from duty at Ft. Ringgold, Tex., upon the return of Asst. Surgeon W. F. Carter, and will then report to commanding officer at Ft. McIntosh, Tex., for duty. S. O. 73, Dept. Texas, June 27, 1887.

Capt Geo. T. Beall, Medical Storekeeper, granted four months' leave of absence. S. O. 150, A. G. O., June 30, 1887.

Capt. A. V. Cherbonnier, Medical Storekeeper, directed to take charge of office and perform duties of acting Asst. Medical Purveyor in St. Louis, Mo., during absence on leave of Capt. Geo. T. Beall, Medical Storekeeper, now performing those duties. S. G. 150, A. G. O., June 30, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING JULY 9, 1887.

Medical Inspector A. Hudson, detached from the "Trenton" and wait orders.

Medical Inspector W. K. Scofield, ordered to relieve Medical Inspector Hudson on the "Trenton."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JULY 2, 1887.

P. A. Surgeon S. T. Armstrong, relieved from duty at Marine Hospital, Memphis, Tenn.; ordered to Marine Hospital, New York, N. Y. June 27, 1887.

P. A. Surgeon C. T. Peckham, relieved from duty at Marine Hospital, Wilmington, N. C.; ordered to Marine Hospital, Memphis, Tenn. June 27, 1887.

P. A. Surgeon A. Glennan, ordered to revenue cutter "Crawford" for temporary duty. June 30, 1887.

Asst. Surgeon S. D. Brooks, ordered to examination for promotion. June 27, 1887. Relieved from duty at Evansville, Ind.; ordered to Marine Hospital at Wilmington, N. C. June 27, 1887.